Actiontec®

54 Mbps

Wireless Cable/DSL Router

Model #: GT704WR
Firmware version: 3.0.1.0.5b-GT704WR
IB: 1.1.1.42

User Manual

Solutions for the Digital Life™

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Introduction 1

Thank you for purchasing the *Action*tec 54 Mbps Wireless Cable/DSL Router. The Router is the simplest way to connect computers to a high-speed broadband connection using a Ethernet cable/DSL modem. This easy-to-use product is perfect for the home office or small business. If you want to take your computing to the next level, the *Action*tec 54 Mbps Wireless Cable/DSL Router is sure to be one of the keys to your success.

Package Contents

- *Action*tec 54 Mbps Wireless Cable/DSL Router
- Power cord
- Yellow (Ethernet) cable
- Installation CD
- Quick start guide

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Minimum System Requirements

- Active DSL service with Ethernet cable/DSL modem
- Computer with a 10/100 Mbps Ethernet connection
- Microsoft Windows 98 Second Edition (SE), Millennium Edition (Me), NT 4.0, 2000, or XP; Mac OS 7.1 and above
- Internet Explorer 4.0 or higher (5.x recommended) or Netscape Navigator 4.0 or higher (4.7 recommended)
- TCP/IP network protocol installed on each computer

Features

- Plug-and-Play installation support for systems with Windows operating systems (98SE, Me, 2000, and XP)
- Ethernet WAN port (RJ-45)
- IP packet routing and transparent bridge
- Routing protocol (RIP-1, RIP-2) and static routing support
- Built-in NAT, DHCP server
- DNS relay support
- PAP/CHAP authentication, administrative passwords through Telnet
- 64-, 128-, and 256-bit WEP/WPA wireless LAN security
- 802.1x, WPA, and WPA-PSK for additional security wireless LAN security
- Compliant with IEEE 802.3 Ethernet standard
- 10/100 Base-T Ethernet ports (4)
- Flow control support for Fast Ethernet
- Web-based configuration setup
- Default configuration backup restore

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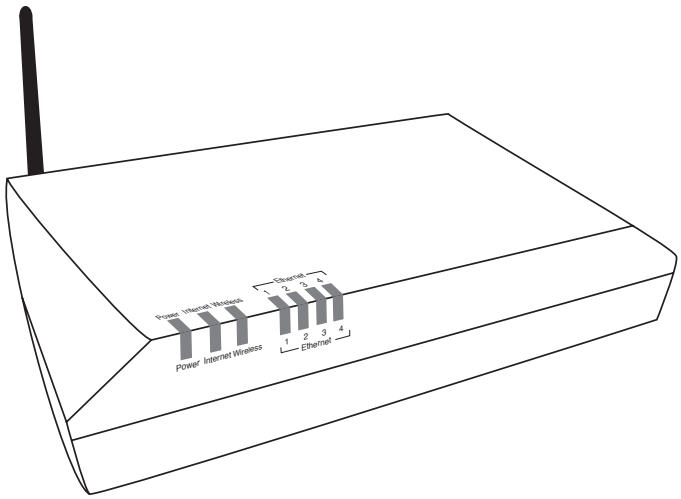
- FTP firmware upgradeable
- Web download support
- 802.11b/g support

Getting to Know the Router

This section contains a quick description of the Router's lights, ports, etc. The Router contains several indicator lights (LEDs) on its front panel and a series of ports on its rear panel.

Front Panel

The front panel of the Router features seven lights: Power, Internet, Wireless, and Ethernet (4).



Power Light

The Power light displays the Router's current status. If the Power light glows steadily green, the Router is receiving power and fully operational. When the Power light flashes rapidly, the Router is initializing. If the Power light is not illuminated when the power cord is plugged in, the Router has suffered a critical error and technical support should be contacted.

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Internet Light

When the Internet light glows steadily, the Router is connected to the DSL provider via an Ethernet cable/DSL modem.

Wireless Light

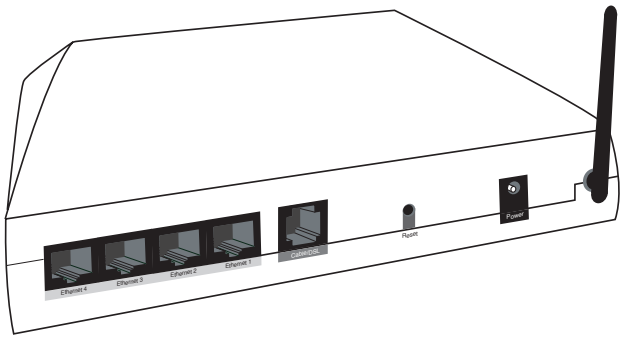
The Wireless light illuminates when the Router is connected wirelessly.

Ethernet Lights

The Ethernet lights illuminate when the Router is connected via one or more of its Ethernet ports.

Rear Panel

The rear panel of the Router contains six ports (Ethernet [4], Cable/DSL, and Power), as well as a Reset switch.



Ethernet Ports

The Ethernet ports are used to connect computers to the Router via Ethernet cable. The Ethernet ports are 10/100 Mbps auto-sensing ports, and either a straight-through or crossover Ethernet cable can be used when connecting to the ports.

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Cable/DSL Port

The Cable/DSL port is used to connect the Router to an Ethernet cable/DSL modem.

Reset Switch

Depressing the Reset switch for one or two seconds will power cycle the Router (similar to unplugging and then plugging in the Router's Power cord). To restore the Router's factory default settings, depress and hold the Reset switch for approximately 15 seconds. The reset process will start about 10 seconds after releasing the switch.

Power Port

The Power port is used to connect the Power cord to the Router.

Warning: Do not unplug the Power cord from the Router during the reset process. Doing so may result in permanent damage to the Router.

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Setting Up the Router

2

The instructions that follow parallel the steps contained in the *Action*tec Installation Buddy®, which provides a visual guide to setting up the Router. It is recommended the user run the Installation Buddy first, before attempting any other procedures.

To set up the Router, it must be connected to a computer, and then configured. After connecting this first computer, other computers can be added to the network via Ethernet, or wirelessly (see "Setting Up a Network" on page 55).

Connecting a Computer to the Router

1. Insert the Installation CD in the CD-ROM drive of the computer. The Installation Buddy starts automatically. Wait until the following screen appears, read the on-screen instructions, select the country in which you live by clicking in the appropriate check box, then click **Next**.

Actiontec® Installation Buddy®
Welcome to the Actiontec Installation Buddy!
Please select the country in which you live. If the country in which you live is NOT listed below, please select OTHER COUNTRY.
Click NEXT to continue.
Hi! I'm YOUR INSTALLATION BUDDY. I'LL BE AROUND TO HELP YOU OUT...
Please select from the following:
USA
United Kingdom
Other Country
< Back
Next >
Help
Finish
Cancel

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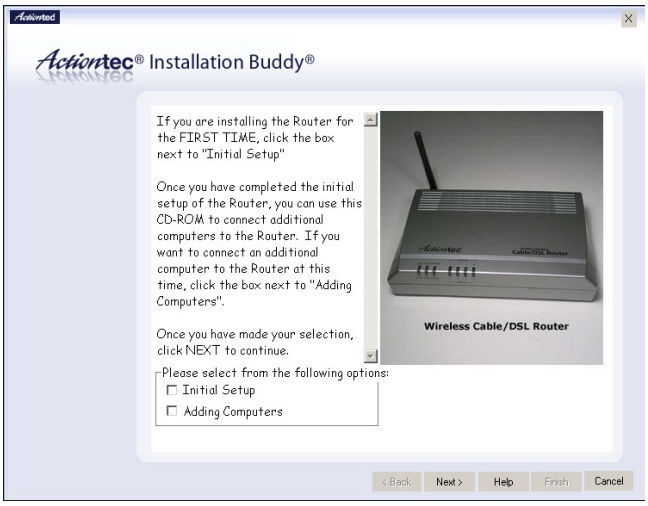
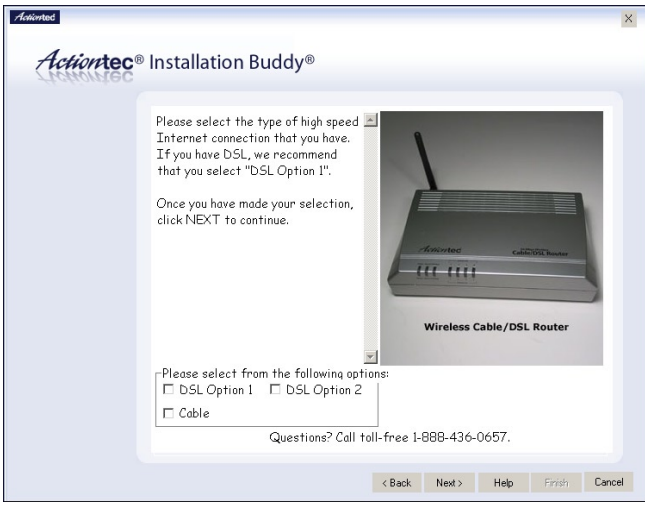
2. Read the instructions, select **Initial Setup** by clicking on the appropriate check box, then click **Next**.


Actiontec® Installation Buddy®
If you are installing the Router for the FIRST TIME, click the box next to "Initial Setup"
Once you have completed the initial setup of the Router, you can use this CD-ROM to connect additional computers to the Router. If you want to connect an additional computer to the Router at this time, click the box next to "Adding Computers".
Once you have made your selection, click NEXT to continue.
Wireless Cable/DSL Router
Please select from the following options:
Initial Setup
Adding Computers
< Back
Next >
Help
Finish
Cancel

3. Read the on-screen instructions, select the type of modem to which the Router will be connected (**DSL** or **Cable**) by clicking in the appropriate check box, then click **Next**.


Actiontec® Installation Buddy®
Please select the type of high speed Internet connection that you have. If you have DSL, we recommend that you select "DSL Option 1".
Once you have made your selection, click NEXT to continue.
Wireless Cable/DSL Router
Please select from the following options:
DSL Option 1
DSL Option 2
Cable
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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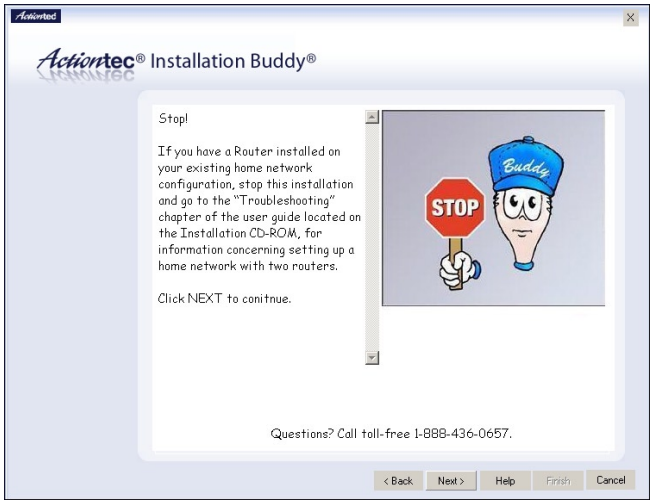
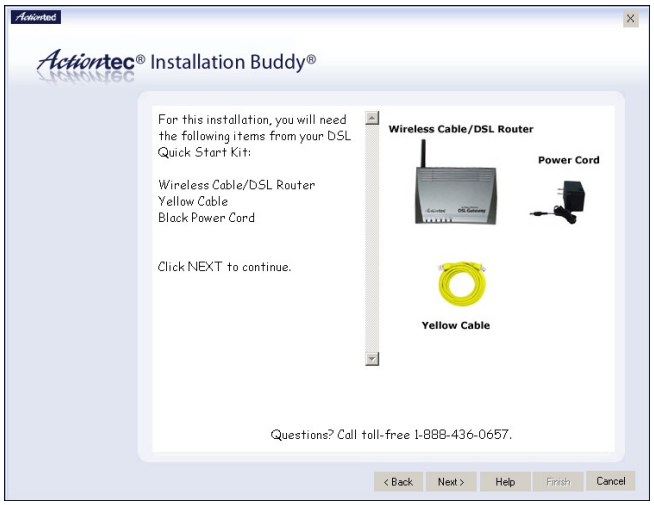
4. Read the on-screen instructions concerning connecting the Router to a network with another router/gateway connected to it, then click **Next**.


Actiontec® Installation Buddy®
Stop!
If you have a Router installed on your existing home network configuration, stop this installation and go to the "Troubleshooting" chapter of the user guide located on the Installation CD-ROM, for information concerning setting up a home network with two routers.
Click NEXT to conitnue.
STOP
Buddy
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

5. Make sure the items needed to connect the Router to the first computer are included in the kit, then click **Next**.



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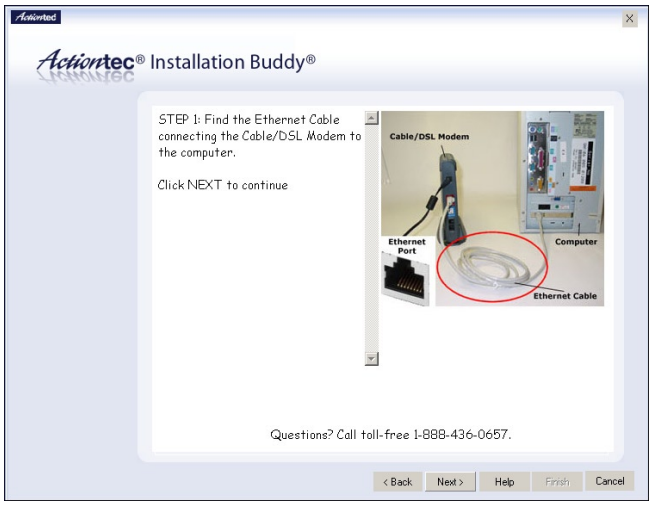
6. Locate the **Ethernet cable** connecting the cable/DSL modem to the computer, then click **Next**.



7. Unplug the **Ethernet cable** connected to the cable/DSL modem from the computer, then click **Next**.

Actiontec® Installation Buddy®
STEP 2: Unplug the Ethernet Cable located in step 1 from the back of the computer and leave it unplugged. You will reconnect this cable later.
Click NEXT to continue.
Ethernet Port
Ethernet Cable
Your Computer may look slightly different
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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8. Get the Router from the kit, then click **Next**.

9. Get the **yellow Ethernet cable** from the kit, then click **Next**.

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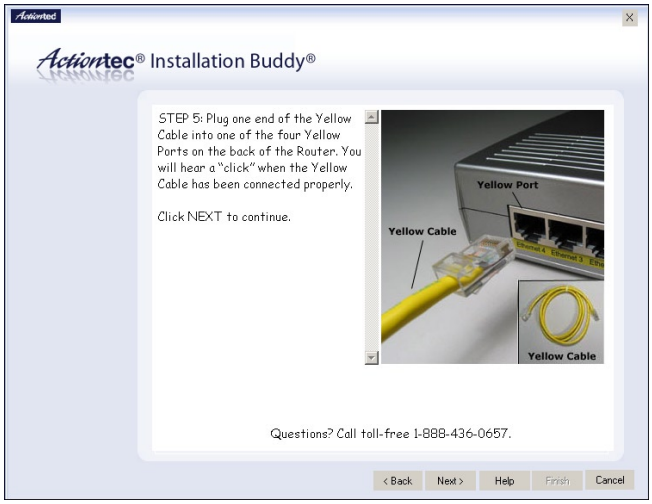
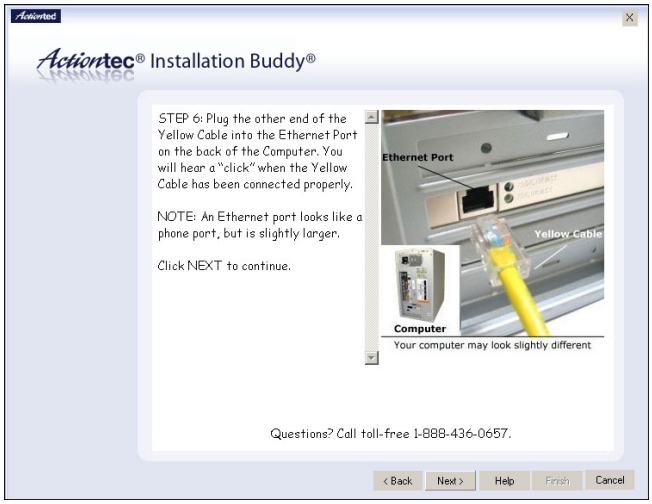
10. Plug one end of the **yellow Ethernet cable** into one of the **yellow Ethernet ports** on the back of the Router, then click **Next**.


Actiontec® Installation Buddy®
STEP 5: Plug one end of the Yellow Cable into one of the four Yellow Ports on the back of the Router. You will hear a "click" when the Yellow Cable has been connected properly.
Click NEXT to continue.
Yellow Port
Yellow Cable
Yellow Cable
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

11. Plug the other end of the **yellow Ethernet cable** into an **Ethernet port** on the back of the computer. Click **Next**.


Actiontec® Installation Buddy®
STEP 6: Plug the other end of the Yellow Cable into the Ethernet Port on the back of the Computer. You will hear a "click" when the Yellow Cable has been connected properly.
NOTE: An Ethernet port looks like a phone port, but is slightly larger.
Click NEXT to continue.
Ethernet Port
Yellow Cable
Computer
Your computer may look slightly different
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

☞ ***Note***: An Ethernet port looks similar to a phone jack, but is slightly larger.

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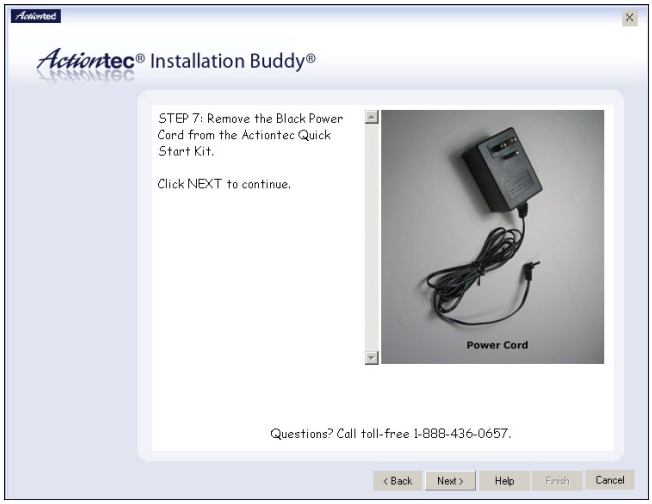
12. Get the **black Power cord** from the kit. Click **Next**.



13. Plug the smaller end of the **black Power cord** into the **black Power port** on the back of the Router. Click **Next**.

Actiontec® Installation Buddy®
STEP 8: Plug the smaller end of the Black Power Cord into the Black Port (marked "Power") on the back of the Router.
Click NEXT to continue.
Black Port
Power Cord
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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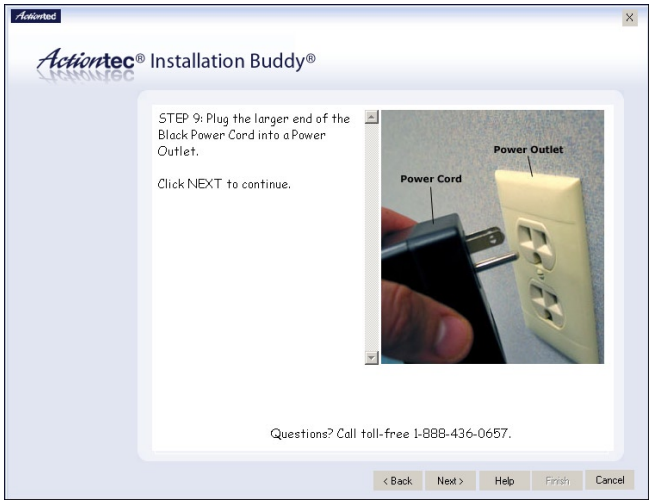
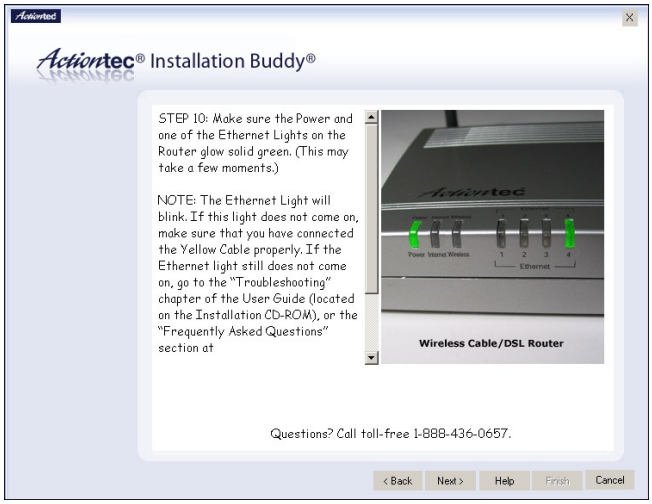
14. Plug the larger end of the **black Power cord** into a **power outlet**. Click **Next**.



15. Make sure the **Power light** glows solid green (it may take a few moments) and one of the **Ethernet lights** flickers. Click **Next**.


Actiontec® Installation Buddy®
STEP 10: Make sure the Power and one of the Ethernet Lights on the Router glow solid green. (This may take a few moments.)
NOTE: The Ethernet Light will blink. If this light does not come on, make sure that you have connected the Yellow Cable properly. If the Ethernet light still does not come on, go to the "Troubleshooting" chapter of the User Guide (located on the Installation CD-ROM), or the "Frequently Asked Questions" section at
Wireless Cable/DSL Router
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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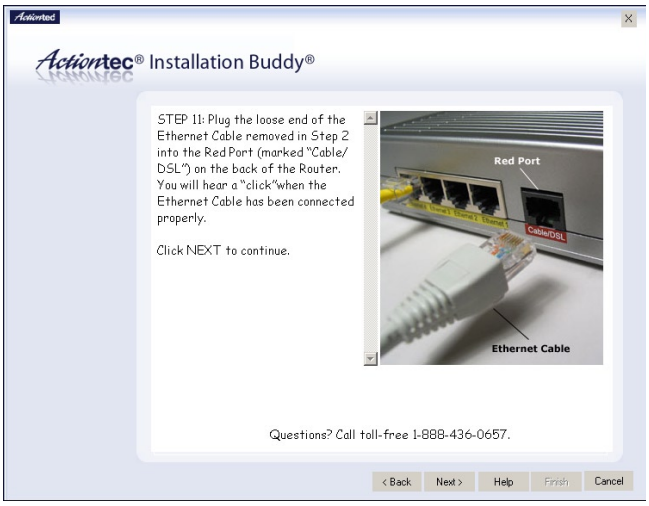
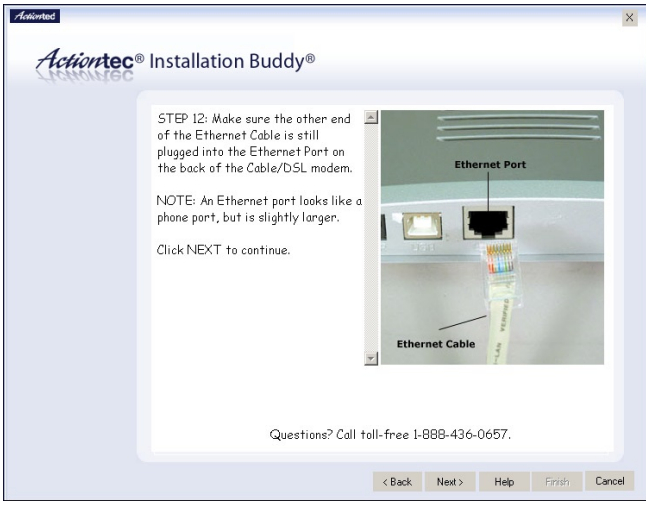
16. Plug the **Ethernet cable** disconnected from the computer in step 3 into the **red Cable/DSL port** on the back of the Router, then click **Next**.


Actiontec® Installation Buddy®
STEP 11: Plug the loose end of the Ethernet Cable removed in Step 2 into the Red Port (marked "Cable/DSL") on the back of the Router. You will hear a "click" when the Ethernet Cable has been connected properly.
Click NEXT to continue.
Red Port
Cable/DSL
Ethernet Cable
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

17. Make sure the other end of the **Ethernet cable** connected to the Router in step 16 is still plugged into the **cable/DSL modem**, then click **Next**.


Actiontec® Installation Buddy®
STEP 12: Make sure the other end of the Ethernet Cable is still plugged into the Ethernet Port on the back of the Cable/DSL modem.
NOTE: An Ethernet port looks like a phone port, but is slightly larger.
Click NEXT to continue.
Ethernet Port
Ethernet Cable
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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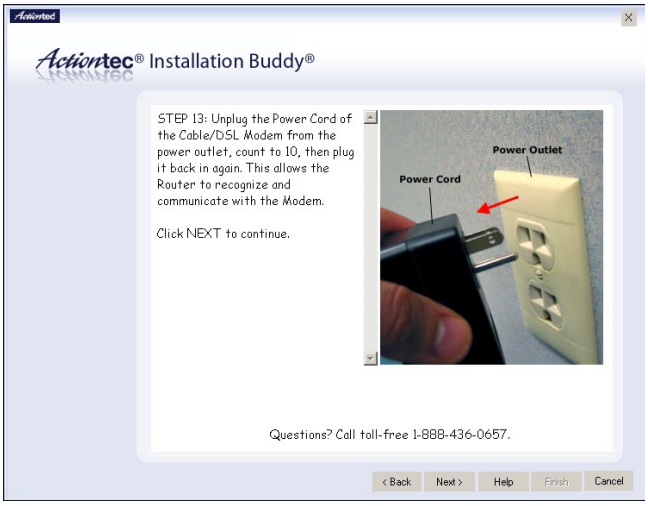
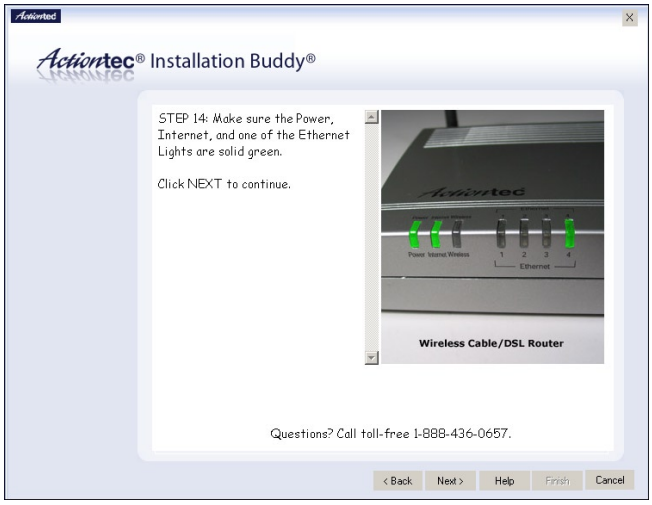
18. Unplug the **power cord** of the **cable/DSL modem**, count to 10, then plug the power cord back in again. This resets the cable/DSL modem, allowing it to communicate with the Router. Cick **Next**.


Actiontec® Installation Buddy®
STEP 13: Unplug the Power Cord of the Cable/DSL Modem from the power outlet, count to 10, then plug it back in again. This allows the Router to recognize and communicate with the Modem.
Click NEXT to continue.
Power Outlet
Power Cord
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

19. Make sure the **Power**, **Internet**, and one of the **Ethernet lights** glow solid green, then click **Next**. The Ethernet light may also flicker.



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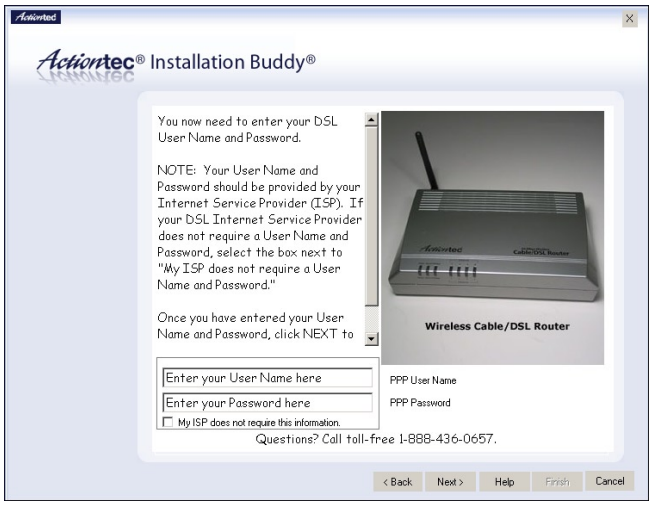
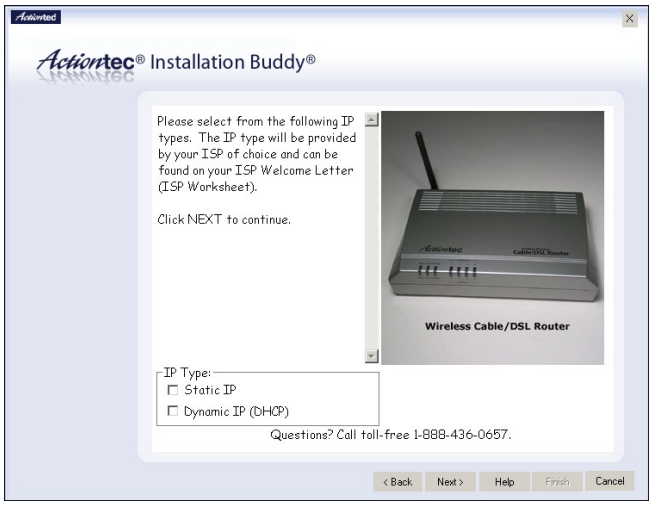
20. Enter the user name and password in the appropriate text boxes (or click the check box next to "My ISP does not require this information."), then click **Next**.


Actiontec® Installation Buddy®
You now need to enter your DSL User Name and Password.
NOTE: Your User Name and Password should be provided by your Internet Service Provider (ISP). If your DSL Internet Service Provider does not require a User Name and Password, select the box next to "My ISP does not require a User Name and Password."
Once you have entered your User Name and Password, click NEXT to
Wireless Cable/DSL Router
Enter your User Name here
Enter your Password here
My ISP does not require this information.
PPP User Name
PPP Password
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

21. Select the appropriate IP type. This information should be available from the ISP. When finished, click **Next**.
If **Static IP** is selected, go directly to step 22.
If **Dynamic IP (DHCP)** is selected, got directly to step 23.


Actiontec® Installation Buddy®
Please select from the following IP types. The IP type will be provided by your ISP of choice and can be found on your ISP Welcome Letter (ISP Worksheet).
Click NEXT to continue.
Wireless Cable/DSL Router
IP Type:
Static IP
Dynamic IP (DHCP)
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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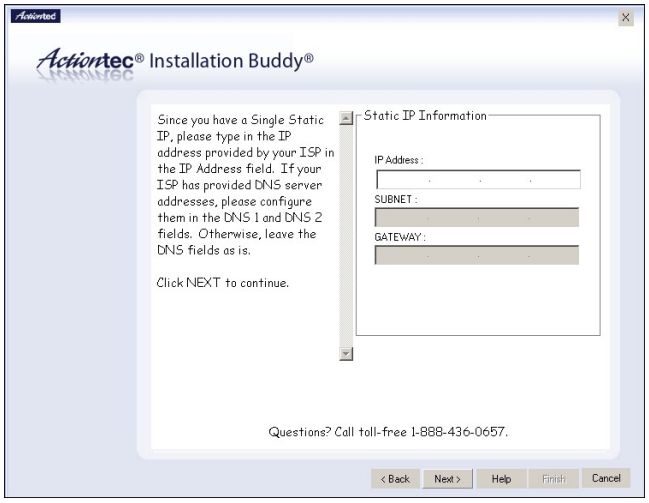
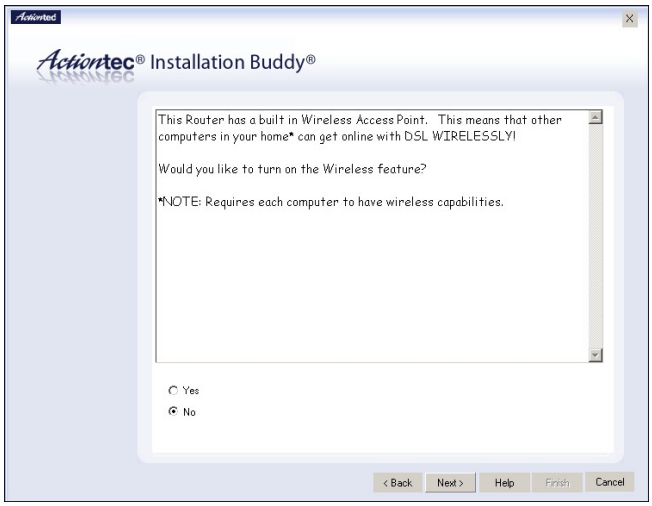
22. If Static IP was selected in step 21, enter the **IP Address**, **Subnet**, **Router**, **DNS 1**, and **DNS 2** information (if applicable) in the proper text boxes. This information should be available in the ISP. When finished, click **Next** and go directly to step 24.


Actiontec® Installation Buddy®
Since you have a Single Static IP, please type in the IP address provided by your ISP in the IP Address field. If your ISP has provided DNS server addresses, please configure them in the DNS 1 and DNS 2 fields. Otherwise, leave the DNS fields as is.
Click NEXT to continue.
Static IP Information
IP Address :
SUBNET :
GATEWAY :
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

23. If DHCP was selected in step 21, the screen below appears. If other computers will be connected to the Router wirelessly at some point (see chapter 6, "Setting Up a Network," on page 55), turn on the Router's wireless access point feature by clicking in the circle next to "Yes." Click **Next**.


Actiontec® Installation Buddy®
This Router has a built in Wireless Access Point. This means that other computers in your home* can get online with DSL WIRELESSLY!
Would you like to turn on the Wireless feature?
*NOTE: Requires each computer to have wireless capabilities.
Yes
No
< Back
Next >
Help
Finish
Cancel

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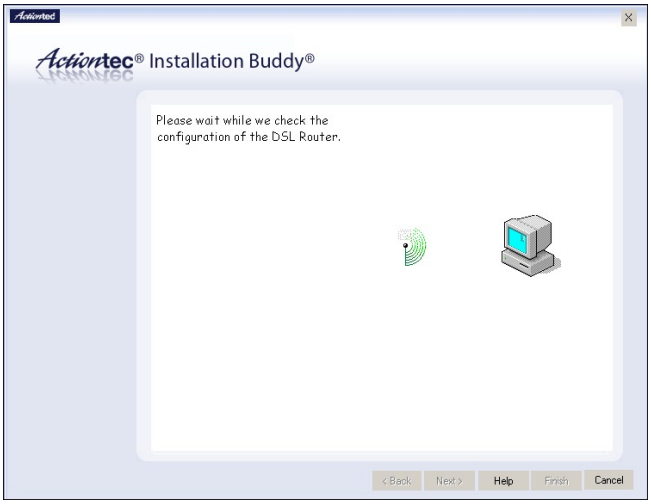
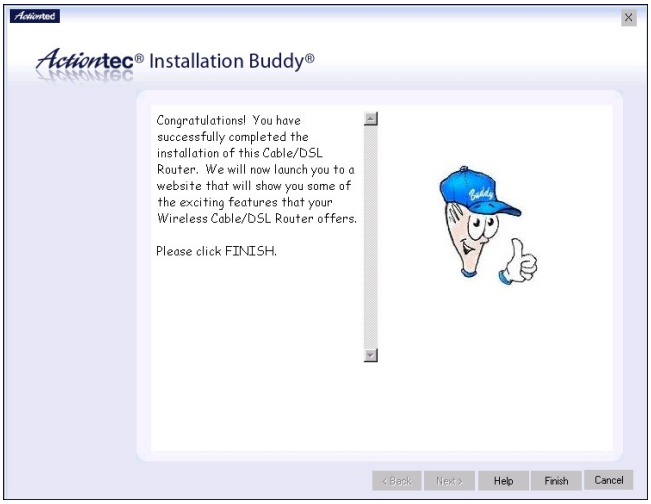
24. The Installation Buddy checks the configuration of the Router.



25. When the configuration is complete, a series of "Congratulations" screens appear. Read the on-screen information, then click through the next few screens, then click **Finish** in the last screen to exit the Installation Buddy.


Actiontec® Installation Buddy®
Congratulations! You have successfully completed the installation of this Cable/DSL Router. We will now launch you to a website that will show you some of the exciting features that your Wireless Cable/DSL Router offers.
Please click FINISH.
< Back
Next >
Help
Finish
Cancel

The Router is successfully configured and ready for use.

To make changes to the Router's Advanced Configuration settings, see Chapter 4, "Using Advanced Setup," on page 27.

To create a network by connecting more computers to the Router, see Chapter 6, "Setting Up a Network," on page 55.

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Performing a Basic Setup

3

This chapter is a guide through a basic setup of the Router, including how to connect the Router to the ISP and changing the user name and password.

To complete a basic setup, the user will need information provided by the ISP. This information is sometimes provided in a welcome letter or ISP worksheet. If this document is not available, contact the ISP immediately and request one.

Basic Setup

To configure the Router for basic operation:

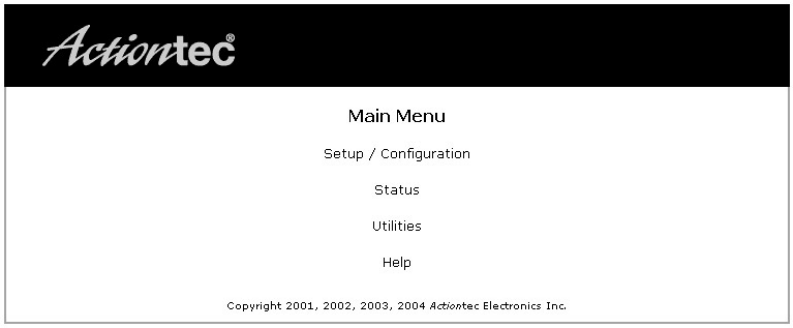
☞ ***Note:*** If you already set up the Router using the Installation Buddy (as described in Chapter 2, "Setting Up the Router"), the settings described in this section have already been configured.

1. Open a Web browser. In the "Address" text box, type

`http://192.168.0.1`

then press **Enter** on the keyboard.

2. The "Main Menu" screen appears. Select **Setup/Configuration**.



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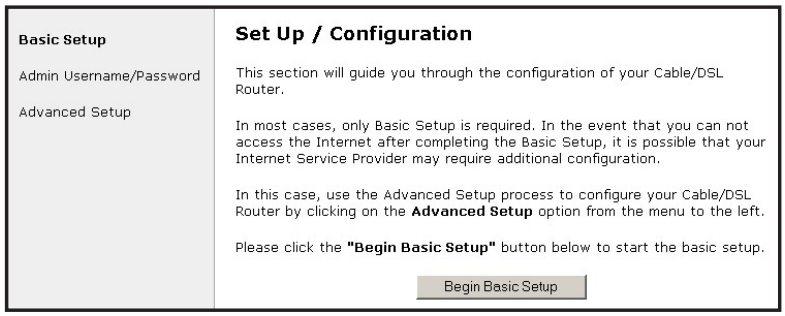
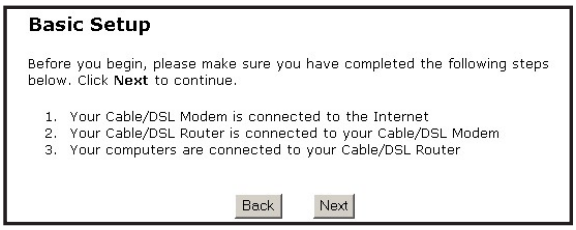
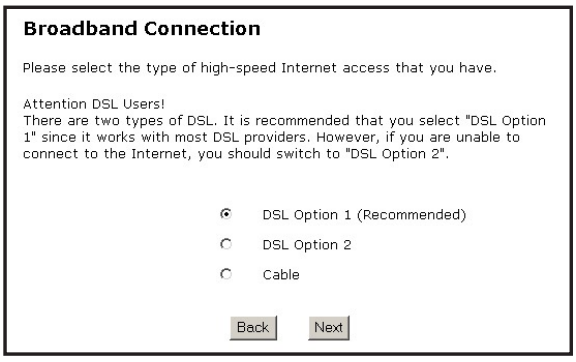
3. Follow the instructions in the "Set Up/Configuration" screen, then click **Begin Basic Setup**.


Basic Setup
Admin Username/Password
Advanced Setup
Set Up / Configuration
This section will guide you through the configuration of your Cable/DSL Router.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your Cable/DSL Router by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

4. In the next screen, follow the onscreen instructions, then click **Next**.


Basic Setup
Before you begin, please make sure you have completed the following steps below. Click Next to continue.
1. Your Cable/DSL Modem is connected to the Internet
2. Your Cable/DSL Router is connected to your Cable/DSL Modem
3. Your computers are connected to your Cable/DSL Router
Back
Next

5. In the next screen, select the type of connection provided by the ISP by clicking in the circle next to **DSL Option 1(Recommened)**, **DSL Option 2**, or **Cable**. If unsure about the selection, contact the ISP.
If DSL Option 1 was chosen, go directly to step 6.
If DSL Option 2 or Cable was chosen, go directly to step 7.


Broadband Connection
Please select the type of high-speed Internet access that you have.
Attention DSL Users!
There are two types of DSL. It is recommended that you select "DSL Option 1" since it works with most DSL providers. However, if you are unable to connect to the Internet, you should switch to "DSL Option 2".
DSL Option 1 (Recommended)
DSL Option 2
Cable
Back
Next

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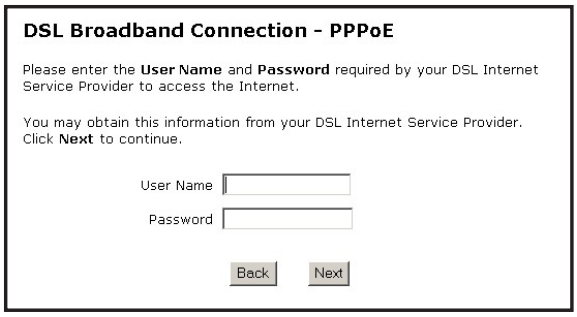
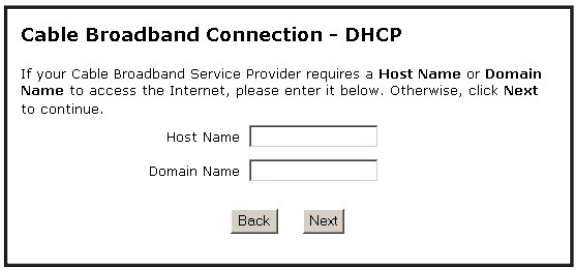
6. Enter the **User Name** and **Password** provided by the ISP in the "DSL Broadband Connection - PPPoE" screen. If the ISP provided a static IP address, enter it in the **Static IP** text box. If not, leave it blank. Click **Next** and go directly to step 8.


DSL Broadband Connection - PPPoE
Please enter the User Name and Password required by your DSL Internet Service Provider to access the Internet.
You may obtain this information from your DSL Internet Service Provider. Click Next to continue.
User Name
Password
Back
Next

7. If DSL Option 2 or Cable was selected in step 5, enter the **Host Name** and **Domain Name** provided by the ISP in the "Cable Broadband Connection - DHCP" screen. If the ISP provided a static IP address, enter it in the **Static IP** text box. If the ISP provided no host or domain name, leave the text boxes blank. Click **Next**.


Cable Broadband Connection - DHCP
If your Cable Broadband Service Provider requires a Host Name or Domain Name to access the Internet, please enter it below. Otherwise, click Next to continue.
Host Name
Domain Name
Back
Next

8. Click **Save and Restart** in the "Save and Restart" screen.

Save and Restart
Please click the Save and Restart button below to save your settings and restart your Cable/DSL Router.
Save and Restart

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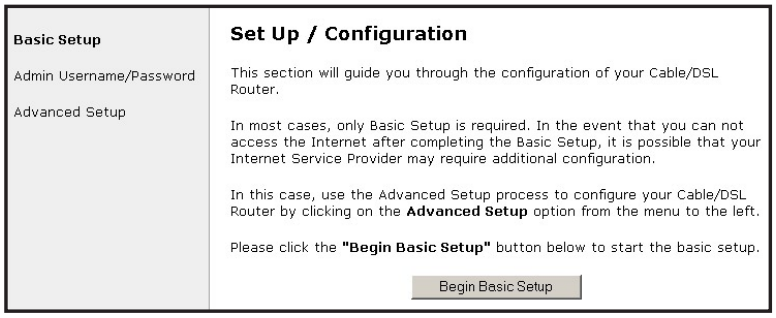
8. The "Congratulations" screen appears. The Router is successfully configured.

The Power light flashes rapidly while the Router restarts, then glows steadily green when fully operational. The Internet light will also glow steadily green. The Router is now configured and users can start surfing the Web.
If an error stating the Web browser was unable to connect to the Internet appears, check the configuration settings. Ensure all the information required by the ISP is entered correctly.

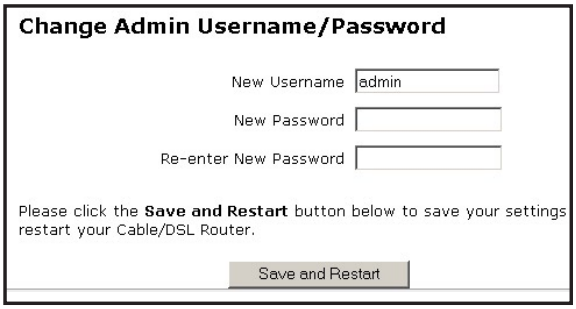
Changing the Admin User Name and Password

To create or change the admin user name and password, allowing access to the Router's Web Configuration screens, follow these instructions:

1. From the Setup/Configuration screen, select **Change Admin Password** from the menu on the left side.


Basic Setup
Admin Username/Password
Advanced Setup
Set Up / Configuration
This section will guide you through the configuration of your Cable/DSL Router.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your Cable/DSL Router by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

2. The "Change Admin Username/Password" screen appears. Enter a new user name (optional) in the "New Username" text box, then a password in the "New Password" text box. Re-enter the password in the "Re-enter New Password" text box. Make sure to write the user name and password down and keep them in a secure location. They will be needed to access to the Router's Web Configurations screens in the future.


Change Admin Username/Password
New Username
admin
New Password
Re-enter New Password
Please click the Save and Restart button below to save your settings restart your Cable/DSL Router.
Save and Restart

3. Click "Save and Restart" at the bottom of the screen.

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4. The "Save and Restart" page appears. Click "Save and Restart" to save the settings changed in the Change Admin Username/Password screen.

Save and Restart
Please click the Save and Restart button below to save your settings and restart your Cable/DSL Router.
Save and Restart

Once the Router has rebooted, the password is active. To access the Router's Web Configuration screens, the username and password must be entered.

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Using Advanced Setup

4

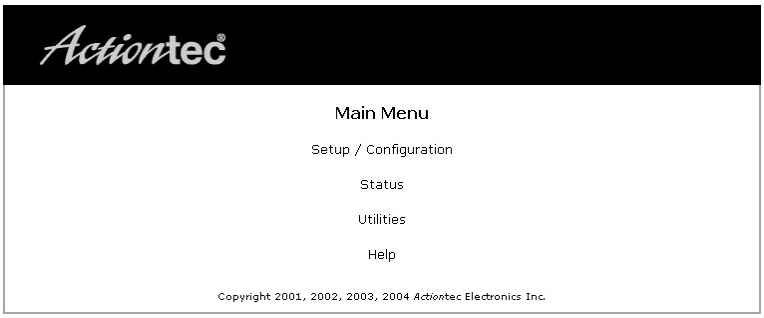
This section contains information concerning setting up the advanced features of the Router, such as wireless settings, remote management, and Web site blocking.

Accessing Advanced Setup

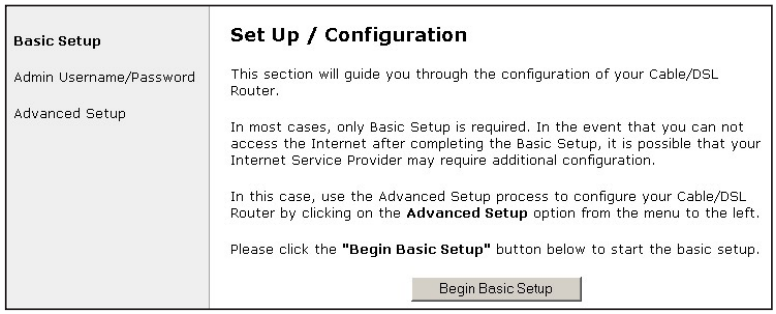
To access the Advanced Setup configuration screens:

1. Open a Web browser. In the "Address" text box type:
   `http://192.168.0.1`
   then press **Enter** on the keyboard.

2. The "Main Menu" screen appears. Select **Setup/Configuration**.



3. In the "Set Up/Configuration" screen, read the instructions, then select **Advanced Setup** from the menu on the left side.


Basic Setup
Admin Username/Password
Advanced Setup
Set Up / Configuration
This section will guide you through the configuration of your Cable/DSL Router.
In most cases, only Basic Setup is required. In the event that you can not access the Internet after completing the Basic Setup, it is possible that your Internet Service Provider may require additional configuration.
In this case, use the Advanced Setup process to configure your Cable/DSL Router by clicking on the Advanced Setup option from the menu to the left.
Please click the "Begin Basic Setup" button below to start the basic setup.
Begin Basic Setup

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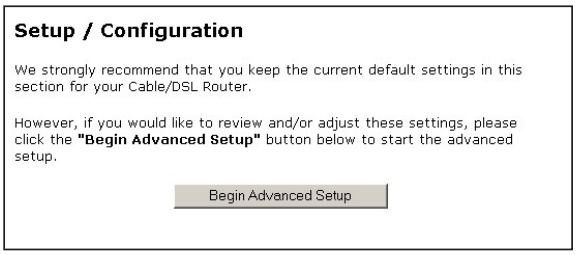
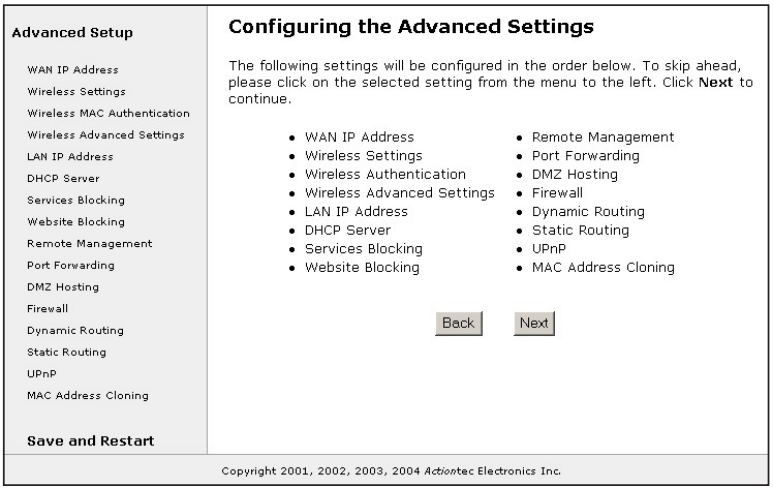
4. In the next screen, read the recommendations. To perform an advanced setup on the Router, click **Begin Advanced Setup**.


Setup / Configuration
We strongly recommend that you keep the current default settings in this section for your Cable/DSL Router.
However, if you would like to review and/or adjust these settings, please click the "Begin Advanced Setup" button below to start the advanced setup.
Begin Advanced Setup

5. The "Configuring the Advanced Settings" screen appears. To check all the settings, or if unsure of which settings to modify, select **Next**. To modify a specific configuration, click on its name in the menu bar on the left.



☞ ***Note***: To save changes made in any of the Advanced Setup screens, click **Save and Restart** at the bottom of the gray menu on the left side of the screen.

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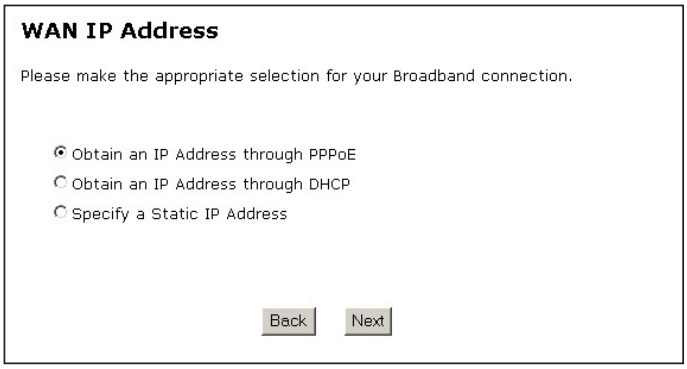
WAN IP Address

Selecting **WAN IP Address** in the "Advanced Configuration" screen generates the "WAN IP Address" screen. WAN IP Address allows manual set up of the IP address of the Router. There are three ways to do this: **Obtain an IP Address through PPPoE**, **Obtain an IP Address through DHCP**, or **Specify a Static IP Address**.

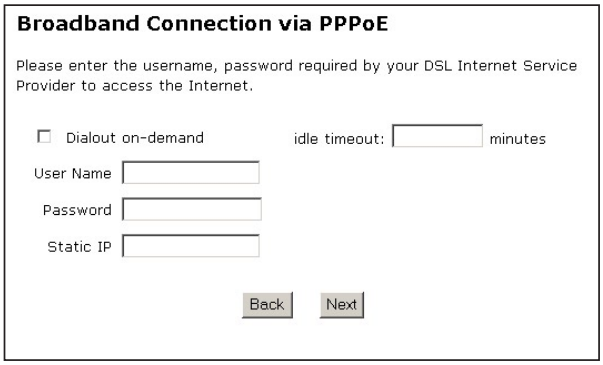
☞ ***Note***: Some DSL providers use PPPoE to establish communication with an end user. Other types of broadband Internet connections (such as fixed point wireless) may use either DHCP or Static IP address. If unsure about which connection is present, check with the ISP before continuing.

After selecting a connection type, click **Next** to continue configuring the connection.


WAN IP Address
Please make the appropriate selection for your Broadband connection.
Obtain an IP Address through PPPoE
Obtain an IP Address through DHCP
Specify a Static IP Address
Back
Next

Obtain an IP Address through PPPoE

Select this option to allow the Router to use the Point-to-Point over Ethernet (PPPoE) protocol.



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If a **User Name**, **Password** and/or **Static IP** was entered in the Installation Buddy or during Basic Setup, it should be displayed in the "Broadband Connection via PPPoE" screen. If not, enter the information now. If the information is unavailable, contact the ISP.

Dialout on-demand/Idle timeout

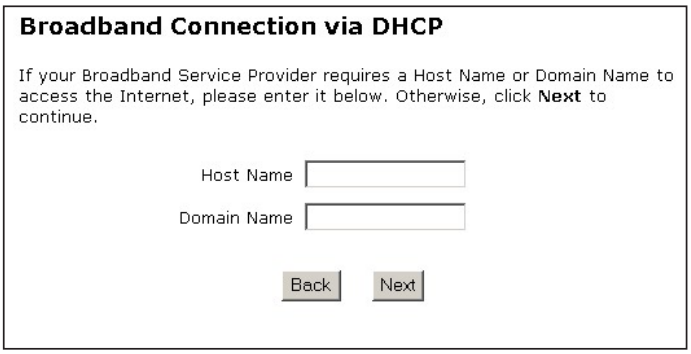
To have the Router automatically connect to the Internet whenever needed (when a Web browser is opened, for example), activate "Dialout on-demand" by clicking in the appropriate check box.
When Dialout on-demand is activated, the user can also set the Router to disconnect from the Internet after a certain amount of idle time (no Internet activity). To do this, enter the number of idle time minutes (minimum 2 minutes) before disconnection occurs in the text box before "Minutes."

Obtain an IP Through DHCP

Select this option if the IP service is configured to use RFC 1483 Bridged or Routed (used for configurations without a Static IP assigned by an ISP). In this mode, the Router will query the Internet Service Provider (ISP) to receive the IP address and routing information, which will terminate at the Router, as opposed to the IP address and routing information being bridged to terminate at the computer. This allows the use of the router capabilities for the Local Area Network (LAN).

Some ISPs need to authenticate their end users with a **Host Name** and/or **Domain Name**. If this is the case, check with the ISP for a host name and domain name and enter them in the appropriate text boxes in the "Broadband Connection via DHCP" screen. If the ISP does not require these settings, leave the text boxes blank.

☞ ***Note***: Contact the ISP if unsure of the proper configuration.


Broadband Connection via DHCP
If your Broadband Service Provider requires a Host Name or Domain Name to access the Internet, please enter it below. Otherwise, click Next to continue.
Host Name
Domain Name
Back
Next

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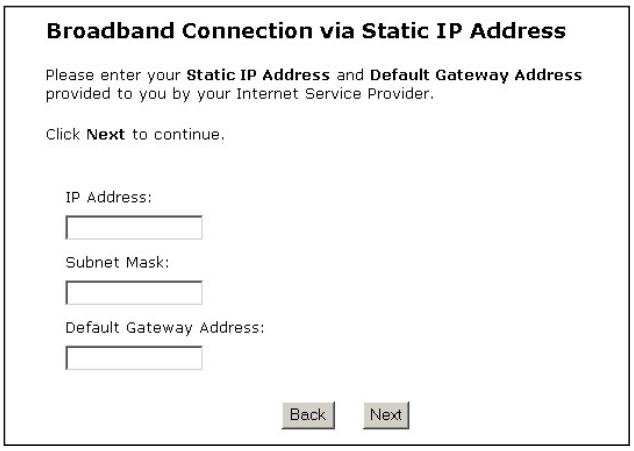
Specify a Static IP Address

Select this option if the ISP service is configured to use RFC 1483 Bridged or Routed using a Static IP Address. Enter the **IP Address**, **Subnet Mask**, and **Default Router Address** provided by the ISP in the "Broadband Connection via Static IP Address" screen, which causes the IP address and routing information to terminate at the Router, as opposed to the IP address and routing information being bridged to terminate at the computer. This allows the use of the router capabilities for the Local Area Network (LAN).


Broadband Connection via Static IP Address
Please enter your Static IP Address and Default Gateway Address provided to you by your Internet Service Provider.
Click Next to continue.
IP Address:
Subnet Mask:
Default Gateway Address:
Back
Next

☞ ***Note***: Contact the ISP if unsure of the proper configuration.

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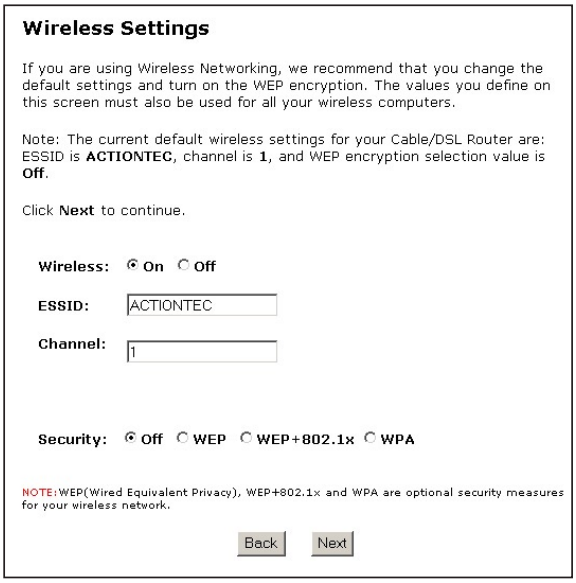
Wireless Settings

Selecting **Wireless Settings** in the "Advanced Configuration" screen generates the "Wireless Settings" screen.


Wireless Settings
If you are using Wireless Networking, we recommend that you change the default settings and turn on the WEP encryption. The values you define on this screen must also be used for all your wireless computers.
Note: The current default wireless settings for your Cable/DSL Router are: ESSID is ACTIONTEC, channel is 1, and WEP encryption selection value is Off.
Click Next to continue.
Wireless: On Off
ESSID: ACTIONTEC
Channel: 1
Security: Off WEP WEP+802.1x WPA
NOTE:WEP(Wired Equivalent Privacy), WEP+802.1x and WPA are optional security measures for your wireless network.
Back
Next

Wireless

To activate the wireless radio, click in the circle next to **On**. To turn off the wireless radio, click in the circle next to **Off**.

ESSID

ESSID is the network name assigned to the wireless network. The factory default setting is "ACTIONTEC." Although *Action*tec recommends keeping the default value intact, the ESSID value can be modified, using any combination of alphanumeric characters (i.e., A-Z, a-z, 0-9). All wireless-capable computers included on the Router's wireless network must have this same ESSID value. (For the *Action*tec 802.11b Wireless PC Card, the ESSID value must be the same as the SSID value.)

Channel

Channel assigns the frequency band at which the Router communicates. In the United States, use channels 1-11. (The factory default value is set to 1.)

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Security

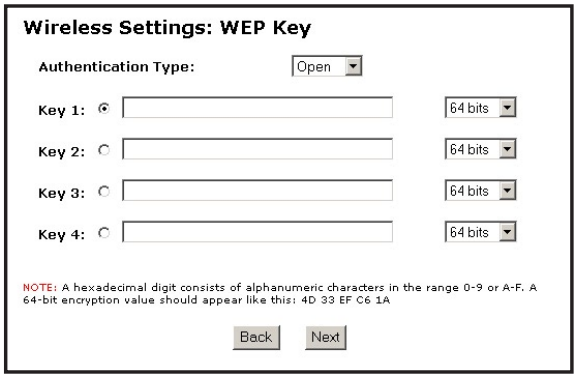
There are four wireless security options: Off, WEP, WEP+802.1x, and WPA. The latter three options are different types of wireless security.

Off

Selecting **Off** disables wireless security. Selecting this option allows any computer with wireless capability and the correct ESSID value to join the wireless network.

WEP

Selecting the security option "WEP" and clicking **Next** in the Wireless Settings screen generates the "WEP Key" screen. Here, the authentication type, encryption level, and WEP keys are entered to activate WEP (**W**ired **E**quivalent **P**rivacy) security encryption for the wireless network.



Authentication Type - There are three authentication types: Open, Shared, and Both. Open authentication allows any wireless-enabled device to recognize the Router, if the correct WEP key is enabled on the device. Shared allows only wireless-enabled devices with the correct WEP key and Shared key to recognize the Router. Selecting Both enables both Open and Shared authentication types.

64-bit WEP - 64-bit WEP requires four separate keys. Each key comprises five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72. To create a set of 64-bit WEP keys, activate all four keys by clicking in the appropriate circles, then enter five hexadecimal digit pairs in each **Key** text box (**Key 1-**, **Key 2-**, **Key 3-**, **Key 4-**). After activating 64-bit WEP on the Router, a computer with wireless capability can join the network only if these same keys are entered in the computer's wireless encryption scheme.

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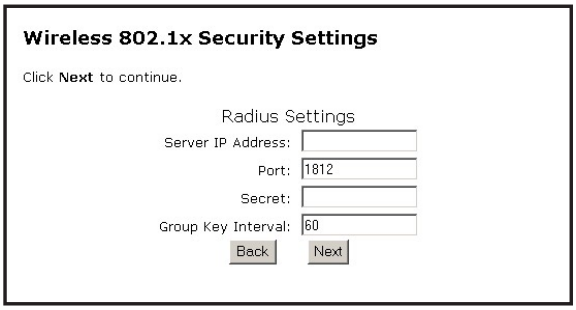
128-bit WEP - 128-bit WEP requires one or more keys, comprising 13 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 128-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1. To create a 128-bit WEP key, activate **Key 1** by clicking in the appropriate circle, then enter 13 hexadecimal digit pairs in the **Key** text box. After activating 128-bit WEP on the Router, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

256-bit WEP - 256-bit WEP requires one or more keys, comprising 29 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. To create a 256-bit WEP key, activate **Key 1** by clicking in the appropriate circle, then enter 29 hexadecimal digit pairs in the **Key** text box. After activating 256-bit WEP on the Router, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

☞ ***Note***: Not all wireless PC Cards support 128- or 256-bit WEP. Ensure that all PC Cards installed in the networked computers support 128- or 256-bit WEP before activating.

WEP+802.1x

Activating **WEP+802.1x** and clicking **Next** in the Wireless Settings screen generates the "Wireless 802.1x Security Settings" screen. This setting is for enterprise networks only, and should be accessed by experienced information systems specialists only.



To set up WEP+802.1x security, enter the IP address of the RADIUS server in the "Server IP Address" text box, and the "Secret" key (for communication between the RADIUS server and the Router) in the "Secret" text box. The "Port" and "Group Key Interval" values should remain the same

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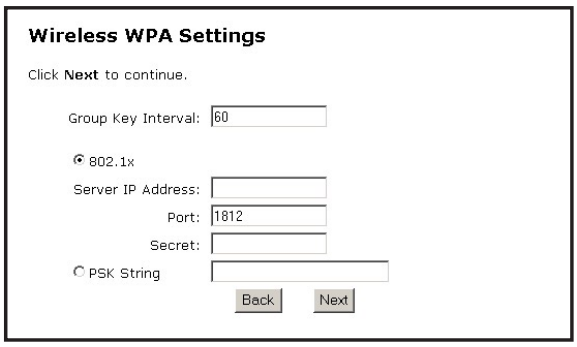
WPA

Activating **WPA** (Wi-Fi **P**rotected **A**ccess) and clicking **Next** in the Wireless Settings screen generates the "Wireless WPA Settings" screen.

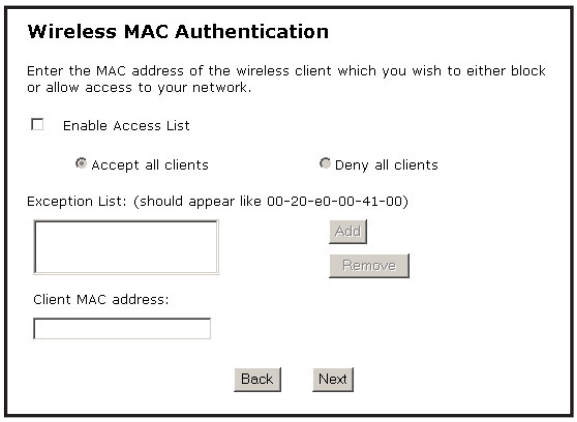


There are two levels of WPA. The "Group Key Interval," "Server IP Address," "Port," and "Secret" text boxes, along with the "802.1x" radio button, are enterprise network specific, and should only be accessed by an experienced information systems professional. See "WEP+802.1x" on the previous page for more information.

"PSK String" is for home network security. To set up a PSK (**P**re-**S**hared **K**ey), click in the circle next to **PSK String**, then enter at least eight alphanumeric characters in the text box. All wireless-enabled devices must support WPA and know the PSK to join the network.

Wireless MAC Authentication

Selecting **Wireless MAC Authentication** in the "Advanced Configuration" screen generates the "Wireless MAC Authentication" screen.


Wireless MAC Authentication
Enter the MAC address of the wireless client which you wish to either block or allow access to your network.
Enable Access List
Accept all clients
Deny all clients
Exception List: (should appear like 00-20-e0-00-41-00)
Add
Remove
Client MAC address:
Back
Next

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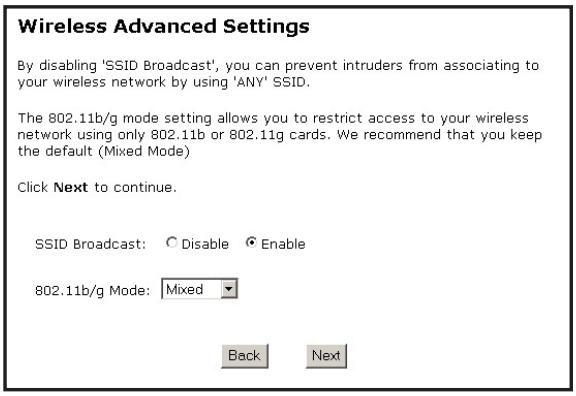
This feature allows the user to control the Wireless LAN Network by denying or allowing wireless access by specifying the MAC Address of the wireless client(s) allowed or denied on the wireless network

After changing settings, click Next or Back to continue, or Save and Restart to make all changes permanent.

Wireless Advanced Settings

Selecting **Wireless Advanced Settings** in the "Advanced Configuration" screen generates the "Wireless Advanced Settings" screen.


Wireless Advanced Settings
By disabling 'SSID Broadcast', you can prevent intruders from associating to your wireless network by using 'ANY' SSID.
The 802.11b/g mode setting allows you to restrict access to your wireless network using only 802.11b or 802.11g cards. We recommend that you keep the default (Mixed Mode)
Click Next to continue.
SSID Broadcast: Disable Enable
802.11b/g Mode: Mixed
Back
Next

SSID Broadcast

To prevent unknown users from associating with the Router's network (by using "ANY" as an SSID, for example), disable the Router's SSID broadcast by clicking in the circle next to "Disable."

802.11b/g Mode

Access to the Router's network can be restricted to wireless clients using either the 802.11b or 802.11g wireless adapters. Click on the down arrow next to the text box and select the desired option. *Action*tec recommends using the "Mixed" mode (the default option), which enables both 802.11b and 802.11g wireless clients to join the network.

After changing settings, click Next or Back to continue, or Save and Restart to make all changes permanent.

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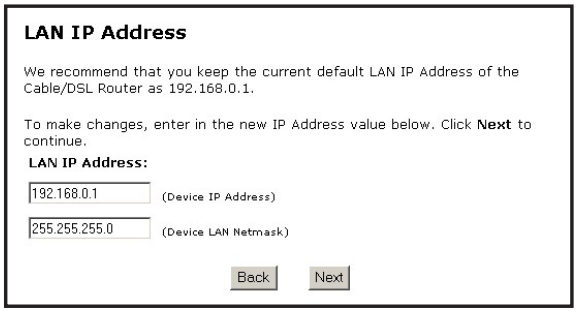
LAN IP Address

Selecting **LAN IP Address** in the "Advanced Configuration" screen generates the "LAN IP Address" screen.


LAN IP Address
We recommend that you keep the current default LAN IP Address of the Cable/DSL Router as 192.168.0.1.
To make changes, enter in the new IP Address value below. Click Next to continue.
LAN IP Address:
192.168.0.1
(Device IP Address)
255.255.255.0
(Device LAN Netmask)
Back
Next

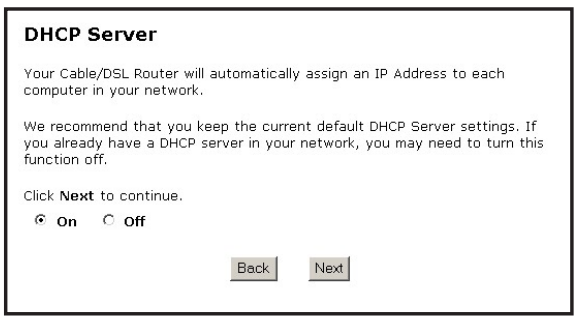
The values in the "LAN IP Address" and "Netmask" text boxes are the IP address and Subnet mask of the Router as seen on the network. These values can be modified for your LAN network, but *Action*tec recommends keeping the default factory settings (IP address 192.168.0.1; Subnet mask 255.255.255.0).

☞ ***Note***: If the Router's LAN IP Address is modified, ensure the DHCP Server range is within the same subnet. For more information, see "DHCP Server Configuration."

After changing settings, click Next or Back to continue, or Save and Restart to make all changes permanent.

DHCP Server

Selecting **DHCP Server** in the "Advanced Configuration" screen generates the "DHCP Server" screen. The Router has a built-in DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) server that automatically assigns a different IP address to each computer on the network, eliminating IP address conflicts.
The factory default setting is **On**. To disable the DHCP Server, select **Off**.


DHCP Server
Your Cable/DSL Router will automatically assign an IP Address to each computer in your network.
We recommend that you keep the current default DHCP Server settings. If you already have a DHCP server in your network, you may need to turn this function off.
Click Next to continue.
On
Off
Back
Next

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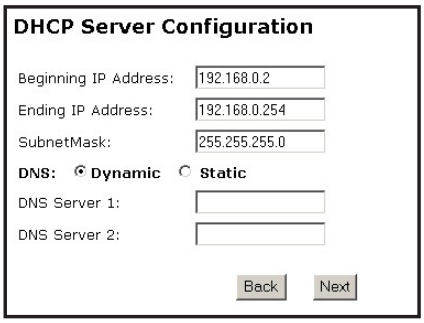
*Action*tec strongly recommends leaving the DHCP Server option **On**. If the DHCP Server option is **Off**, ensure the IP addresses of the networked computers are on the same subnet as the IP address of the Router. For more information, see "DHCP Server Configuration."

DHCP Server Configuration

Clicking **Next** in the "DHCP Server" screen (if the DHCP server is activated) generates the "DHCP Server Configuration" screen. Change IP address range and DNS server information here.



Beginning IP Address

The "Beginning IP Address" is the IP address at which the DHCP server starts assigning IP addresses. *Action*tec recommends keeping the factory default setting (192.168.0.2).

Ending IP Address

The "Ending IP Address" is the IP Address at which the DHCP Server stops assigning IP addresses. Actiontec recommends keeping the factory default settings (192.168.0.254).

The beginning and ending IP addresses define the IP address range of the Router. If the default values are left intact, the Router supplies a unique IP address between 192.168.0.2 and 192.168.0.254 to each computer on the network. Note that the first three groups of numbers of the addresses are identical; this means they are on the same subnet. The IP address of the Router must be on the same subnet as the IP address range it generates. For instance, if the Router's IP address is changed to 10.33.222.1, set the beginning IP address to 10.33.222.2, and the ending IP address to 10.33.222.254.

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DNS (Dynamic or Static)

These options designate the type of DNS server provided by the ISP. If the ISP provided DNS server information, select the type here. If not, leave as is.

DNS Server 1

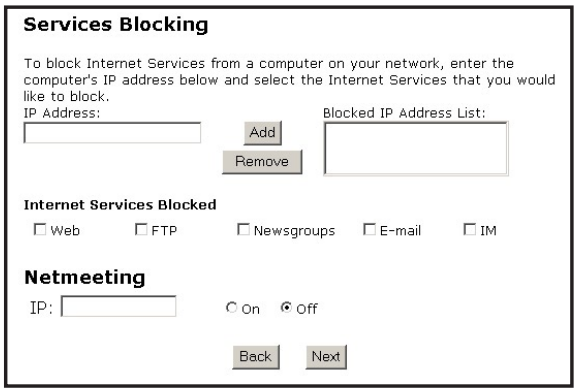
"DNS Server 1" is the primary DNS server provided by the ISP. If the ISP provided DNS server information, enter it here. If not, leave the text box intact.

DNS Server 2

"DNS Server 2" is the secondary DNS provided by the ISP. If the ISP provided secondary DNS server information, enter it here. If not, leave the text box intact.

Services Blocking

Selecting **Services Blocking** in the "Advanced Configuration" screen generates the "Services Blocking" screen.



To modify Internet privileges (Web, FTP, Newsgroups, etc.) for the computers on the network:

1. Enter the computer's IP address in the **IP Address:** text box.
2. Select the Internet service(s) to be blocked.
3. Click **Add** to enter the computer's IP address in the "Blocked IP Address List" text box.
4. To remove blocked services, select the computer's IP address in the "Blocked IP Address List" text box and click **Remove**.

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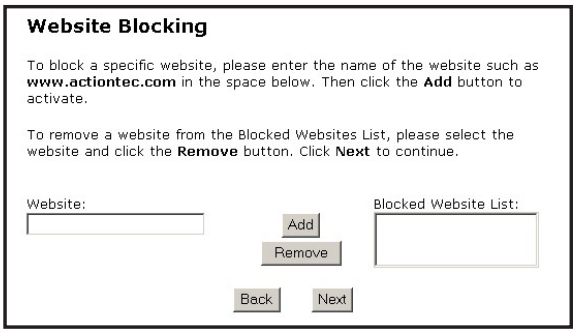
Netmeeting

If a computer on the network uses Netmeeting, enable Netmeeting, by clicking the circle next to "On" and entering the IP address of the computer. Click **Next**, then click **Save and Restart** to apply the settings. If Netmeeting is not needed, click the circle next to "Off."

☞ ***Note***: Netmeeting is used for NAT/Private IP addressing only. If the computer is configured for Unnumbered Mode and has a Public IP Address, Netmeeting does not have to be enabled.

Website Blocking

Selecting **Website Blocking** in the "Advanced Configuration" screen generates the "Website Blocking" screen. This feature enables the Router to block Web sites to all computers on the network. To block a Web site, enter the address of the Web site in the "Website" text box and click **Add**. The blocked Web site address is displayed in the "Blocked Website List" text box, and will not be available to computers on the network. To remove a blocked Web site, click on it in the "Blocked Website List," then click **Remove**.


Website Blocking
To block a specific website, please enter the name of the website such as www.actiontec.com in the space below. Then click the Add button to activate.
To remove a website from the Blocked Websites List, please select the website and click the Remove button. Click Next to continue.
Website:
Add
Remove
Blocked Website List:
Back
Next

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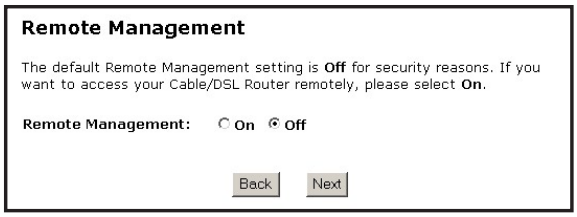
Remote Management

Selecting **Remote Management** in the "Advanced Configuration" screen generates the "Remote Management" screen. Remote Management allows access to the Router through the Internet via another computer. *Action*tec recommends leaving the Remote Management **Off** (the factory default setting).


Remote Management
The default Remote Management setting is Off for security reasons. If you want to access your Cable/DSL Router remotely, please select On.
Remote Management:
On
Off
Back
Next

To access the Router from the Internet, activate Remote Management by selecting **On** and writing down the WAN IP address of the Router (see "WAN IP Address" on page 29). On a computer outside of the network, open a Web browser and enter the Router's WAN IP address in the address text box. The Router's Main Menu (or a password prompt, if a password has been set) appears in the browser window.

☞ ***Note***: Before Remote Management can be activated, the administrator password must be set. To do this, go to the Setup screen and select Change Admin Password. Follow the instructions in the subsequent screens.

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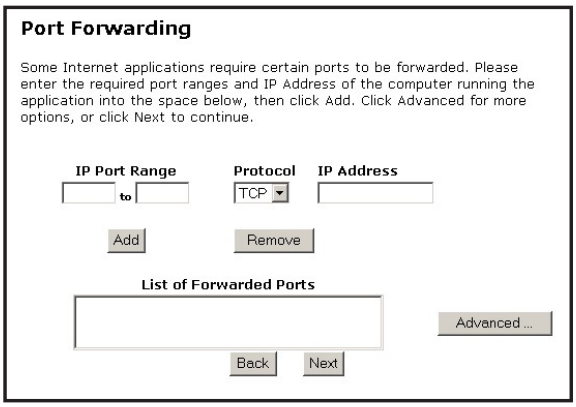
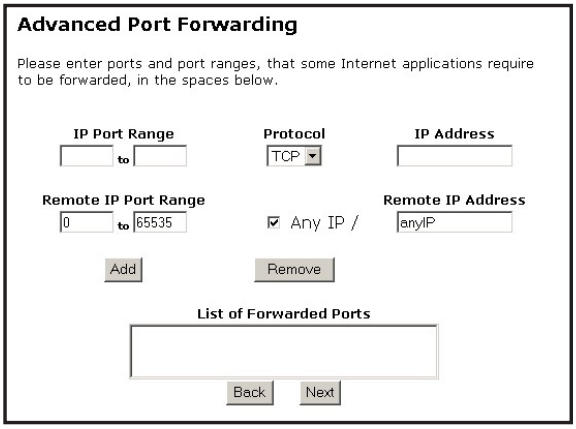
Port Forwarding

Selecting **Port Forwarding** in the "Advanced Configuration" screen generates the "Port Forwarding" screen. Port forwarding allows certain programs to bypass the Router's built-in firewall, allowing access to parts of the network (for hosting a Web or FTP server, for example). To use port forwarding, enter the IP port range in the "IP Port Range" text boxes. (If more than 10 ports are needed, *Action*tec recommends using DMZ Hosting. See "DMZ Hosting," below, for more information.) Choose the protocol type from the "Protocol" list box, then enter the IP address of the computer on the network to be used as a host. Click **Add**. The forwarded ports appear in the "List of Forwarded Ports" text box.
To remove forwarded ports, highlight them, then click **Remove**.


Port Forwarding
Some Internet applications require certain ports to be forwarded. Please enter the required port ranges and IP Address of the computer running the application into the space below, then click Add. Click Advanced for more options, or click Next to continue.
IP Port Range
to
Protocol
TCP
IP Address
Add
Remove
List of Forwarded Ports
Advanced ...
Back
Next

Clicking **Advanced** brings up the "Advanced Port Forwarding" screen.



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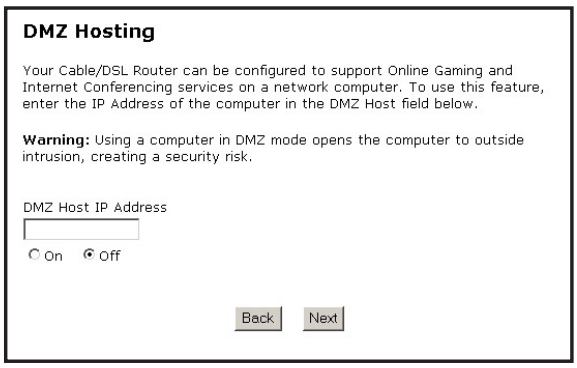
In this screen, the user can allow only certain IP addresses to access forwarded ports. Enter the port range of the forwarded ports in the "Remote IP Port Range" text boxes, enter the IP address to be allowed access in the "Remote IP Address" text box, then click "Add." The active forwarded ports will appear in the "List of Forwarded Ports" text box.
To deactivate a forwarded port, select it from the "List of Forwarded Ports" text box, then click "Remove."

DMZ Hosting

Selecting **DMZ Hosting** in the "Advanced Configuration" screen generates the "DMZ Hosting" screen. To use DMZ hosting, enter the IP address of the computer on the network to be used as a DMZ host in the "DMZ Host IP Address" text box, then click **On**.


DMZ Hosting
Your Cable/DSL Router can be configured to support Online Gaming and Internet Conferencing services on a network computer. To use this feature, enter the IP Address of the computer in the DMZ Host field below.
Warning: Using a computer in DMZ mode opens the computer to outside intrusion, creating a security risk.
DMZ Host IP Address
On
Off
Back
Next

DMZ hosting is used to support online gaming and Internet conferencing services. These programs usually require multiple open ports, making the network accessible from the Internet. DMZ hosting symbolically places the DMZ host computer outside of the Router's network. Access to the network resources while DMZ hosting is active is blocked. *Action*tec recommends activating DMZ hosting only as long as necessary.

Warning: The DMZ Host computer will be vulnerable to computer hackers on the Internet while in DMZ mode.

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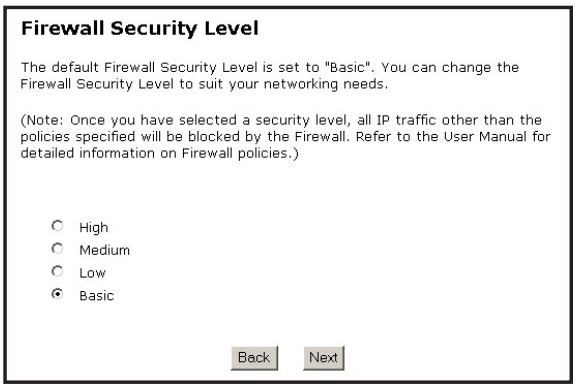
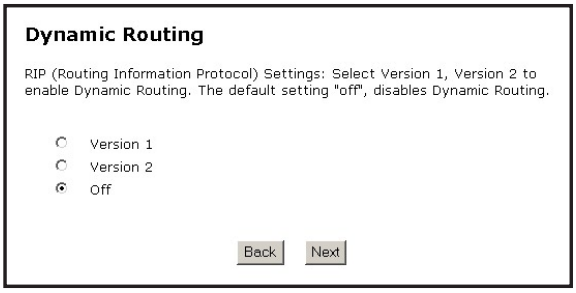
Firewall

Selecting **Firewall** in the "Advanced Configuration" screen generates the "Firewall Security Level" screen. Select the level of security needed for the network. See Appendix F on page 99 for details concerning each level of security.


Firewall Security Level
The default Firewall Security Level is set to "Basic". You can change the Firewall Security Level to suit your networking needs.
(Note: Once you have selected a security level, all IP traffic other than the policies specified will be blocked by the Firewall. Refer to the User Manual for detailed information on Firewall policies.)
High
Medium
Low
Basic
Back
Next

Dynamic Routing

Selecting **Dynamic Routing** in the "Advanced Configuration" screen generates the "Dynamic Routing" screen.


Dynamic Routing
RIP (Routing Information Protocol) Settings: Select Version 1, Version 2 to enable Dynamic Routing. The default setting "off", disables Dynamic Routing.
Version 1
Version 2
Off
Back
Next

If another router or gateway is set up behind the Router in the network configuration, consult the documentation that came with the other router/gateway to see what kind of Dynamic Routing is required to operate it with the Router, then select the appropriate option.

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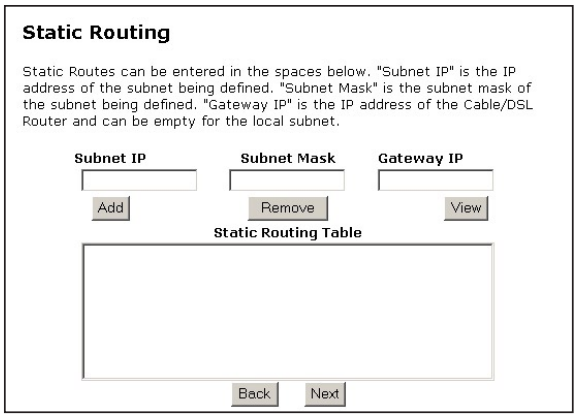
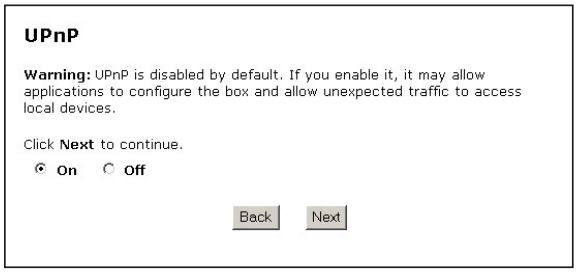
Static Routing

Selecting **Static Routing** in the "Advanced Settings" screen generates the "Static Routing" screen. Enter the addresses in their respective text boxes, then click **Add**. The address will appear in the "Static Routing Table." To remove an address, highlight it by clicking on it in the Static Routing Table, then click **Remove**.


Static Routing
Static Routes can be entered in the spaces below. "Subnet IP" is the IP address of the subnet being defined. "Subnet Mask" is the subnet mask of the subnet being defined. "Gateway IP" is the IP address of the Cable/DSL Router and can be empty for the local subnet.
Subnet IP
Subnet Mask
Gateway IP
Add
Remove
View
Static Routing Table
Back
Next

UPnP (Universal Plug and Play)

Selecting **UPnP** in the "Configuring the Advanced Settings" screen generates the "UPnP" screen. In this screen, the Universal Plug and Play option is turned on or off by activating the appropriate circle.


UPnP
Warning: UPnP is disabled by default. If you enable it, it may allow applications to configure the box and allow unexpected traffic to access local devices.
Click Next to continue.
On
Off
Back
Next

Universal Plug and Play is a zero-configuration networking protocol that allows hardware and software (such as Netmeeting) to operate more efficiently. If Netmeeting is not running properly, activate UPnP.

☞ ***Note***: Activating UPnP presents a slight security risk. After finishing with the hardware or software using UPnP, *Action*tec recommends deactivating UPnP.

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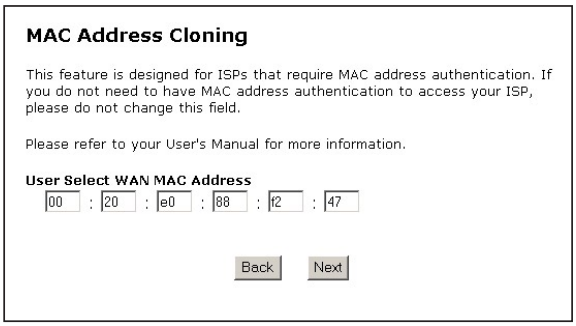
MAC Address Cloning

Selecting **MAC Address Cloning** in the "Configuring the Advanced Settings" screen generates the "MAC Address Cloning" screen. A MAC (Media Access Control) address is an identifier unique to every networkable device, including the Router. Some ISPs require a MAC address to validate a computer's permission to be on their network. If the ISP requires this information, obtain the MAC address of the computer originally configured for the ISP, then enter the MAC address in the "User Select WAN MAC Address" text boxes in the MAC Address Cloning screen. The Router will now have a new MAC address.


MAC Address Cloning
This feature is designed for ISPs that require MAC address authentication. If you do not need to have MAC address authentication to access your ISP, please do not change this field.
Please refer to your User's Manual for more information.
User Select WAN MAC Address
00 : 20 : e0 : 88 : f2 : 47
Back
Next

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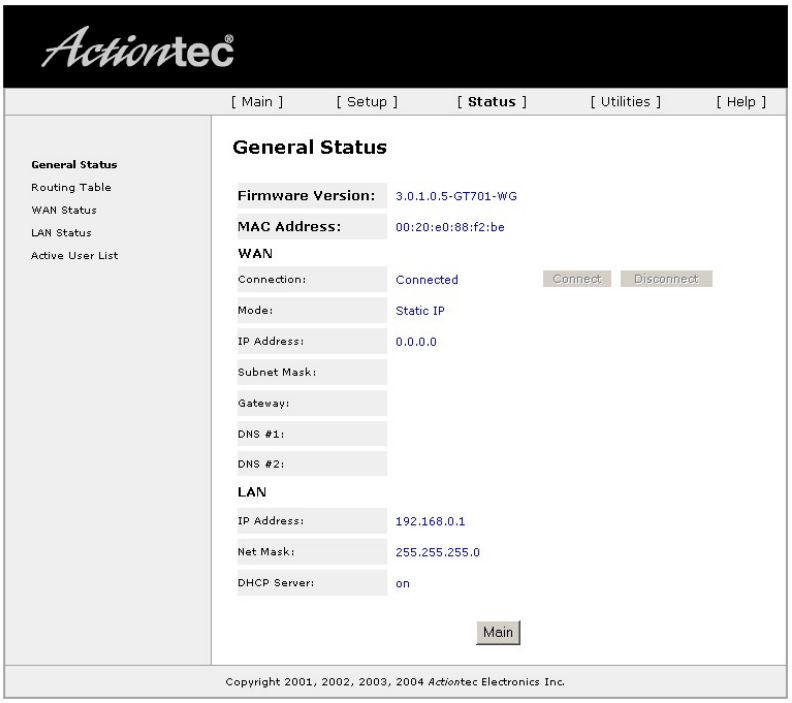
Viewing the Router's Settings

5

After configuring the Router, settings can be viewed by selecting **Status** in the Main Menu. In the left hand column, there are other Status options available: **Routing Table**, **WAN Status**, **LAN Status**, and **Active User List**.
No settings (other than connecting or disconnecting from the Internet) can be changed from the Current Status screen.

Status

Selecting "Status" from the Main Menu screen generates the "General Status" screen.



Firmware Version

Displays the firmware version the Router is currently running.

MAC Address

Displays the MAC (Media Access Control) address of the Router.

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WAN - Connection

Displays the state of the connection to the ISP service (Connected or Disconnected).

WAN - Mode

Displays the type of connection used to communicate with the ISP.

WAN - IP Address

Displays the IP Address the ISP assigned to the Router.

WAN - Subnet Mask

Displays the Subnet Mask address the ISP assigned to the Router.

WAN - Router

Displays the Router address (for the IP Address and Subnet Mask) the ISP assigned to the Router.

WAN - DNS #1 & #2

Displays the Domain Name Server address(es) the ISP assigned to the Router.

LAN - IP Address

Displays the Local Area Network's (LAN) IP address.

LAN - Net Mask

Displays the Subnet Mask address configured for the LAN IP address.

LAN - DHCP Server

Displays the state of the DHCP Server (On or Off).

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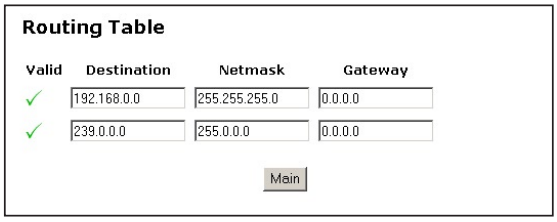
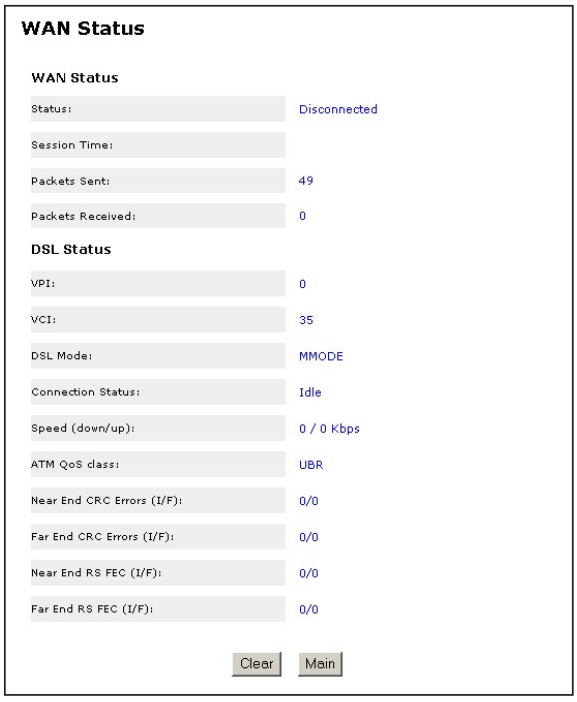
Routing Table

Selecting **Routing Table** generates the "Routing Table" screen. This screen displays on overview of the Router's routes.



WAN Status

Selecting **WAN Status** in the Current Status screen generates the "WAN Status" screen. This screen displays on overview of the Router's WAN (Wide Area Network) connection.



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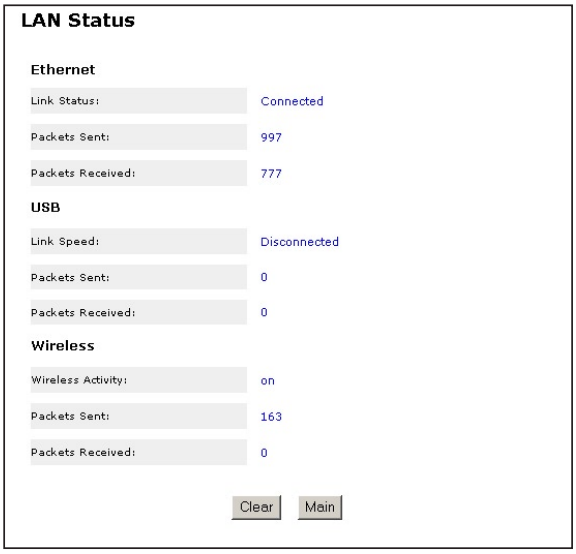
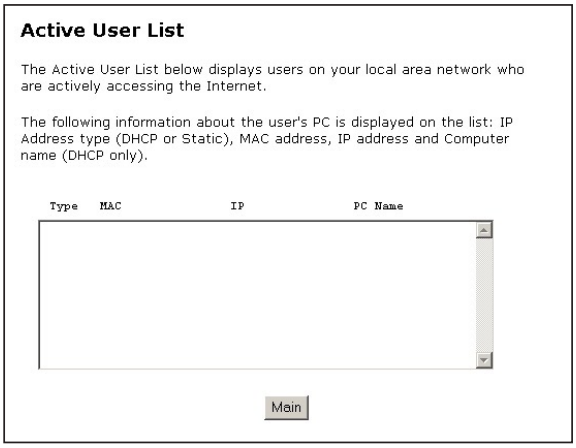
LAN Status

Selecting **LAN Status** generates the "LAN Status" screen. This screen displays on overview of the Router's LAN (Local Area Network) port connections.



Active User List

Selecting **Active User List** generates the "Active User List" screen. This screen displays a list of the users currently connected to the Router accessing the Internet with Network Address Translation (NAT) security activated.


Active User List
The Active User List below displays users on your local area network who are actively accessing the Internet.
The following information about the user's PC is displayed on the list: IP Address type (DHCP or Static), MAC address, IP address and Computer name (DHCP only).
Type
MAC
IP
PC Name
Main

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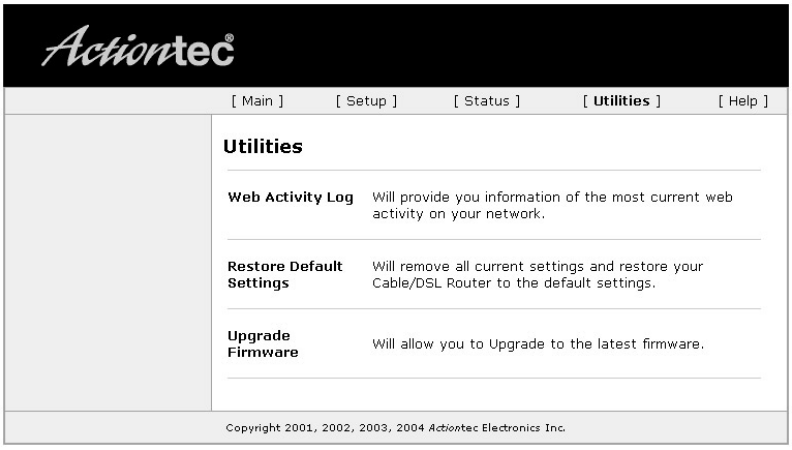
Using Utilities

6

To access the Router's Web-based Utilities, select **Utilities** from the "Main Menu" screen. The "Utilities" screen appears.


Actiontec
[Main] [Setup] [Status] [Utilities] [Help]
Utilities
Web Activity Log
Will provide you information of the most current web activity on your network.
Restore Default Settings
Will remove all current settings and restore your Cable/DSL Router to the default settings.
Upgrade Firmware
Will allow you to Upgrade to the latest firmware.
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From this screen, the Web activity log can be viewed, the DSL settings changed, the Router's factory default settings restored, and the Router's firmware upgraded.

Web Activity Log

The Web Activity Log provides information about the Web sites each computer on the Router's network has visited. To access the Web Activity Log, select **Web Activity Log** from the "Utilities" screen.

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Auto Refresh

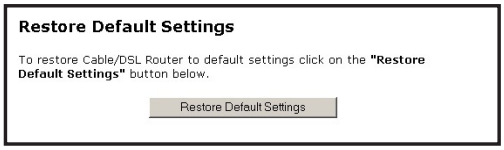
To set the Web Activity Log screen to automatically refresh at certain intervals, activate the circle next to "Auto Refresh Every" at the bottom of the Web Activity Log screen, then enter a time value (in seconds) in the text box, or click on the down arrow and select a time value from the menu that appears. The Web Activity Log will refresh at the chosen interval.

Manual Refresh

To set the Web Activity Log screen to manual refresh, activate the circle next to "Manual Refresh" at the bottom of the Web Activity Log screen. To refresh the Web Activity Log screen, click **Refresh**.

Restore Default Settings

To restore the Router to its factory default settings, select **Restore Default Settings** from the "Utilities" screen. When the "Restore Default Settings" screen appears, click **Restore Default Settings**. Any changes made to the Router's settings will be lost and the factory default settings will be restored. During this process, the Router's Power light flashes and the Router is disabled.


Restore Default Settings
To restore Cable/DSL Router to default settings click on the "Restore Default Settings" button below.
Restore Default Settings

Warning: Do not unplug the power cord from the Router during the Restore Default Settings process. Doing so may result in permanent damage to the Router.

When the Power Light stops flashing and glows steadily green, the Router is fully operational, and the default settings have been restored.

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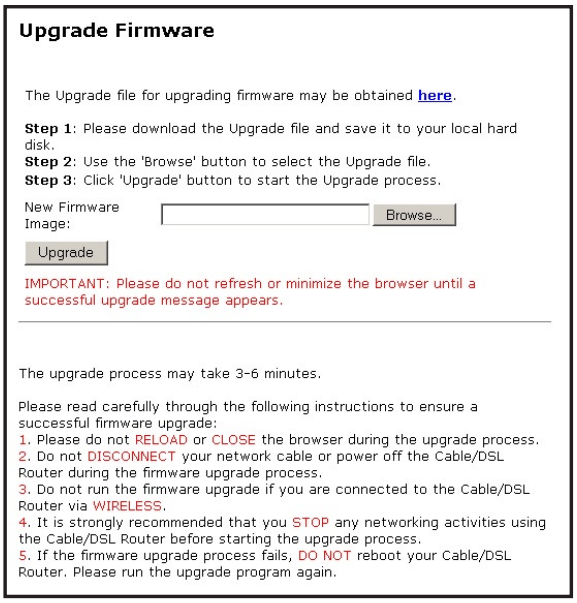
Upgrade Firmware

Selecting **Upgrade Firmware** in the "Utilities" screen generates the "Upgrade Firmware" screen. *Action*tec periodically posts firmware upgrades to enhance the capabilities and boost the performance of the Router. Follow the on-screen instructions to upgrade the Router's firmware.


Upgrade Firmware
The Upgrade file for upgrading firmware may be obtained here.
Step 1: Please download the Upgrade file and save it to your local hard disk.
Step 2: Use the 'Browse' button to select the Upgrade file.
Step 3: Click 'Upgrade' button to start the Upgrade process.
New Firmware Image:
Browse...
Upgrade
IMPORTANT: Please do not refresh or minimize the browser until a successful upgrade message appears.
The upgrade process may take 3-6 minutes.
Please read carefully through the following instructions to ensure a successful firmware upgrade:
1. Please do not RELOAD or CLOSE the browser during the upgrade process.
2. Do not DISCONNECT your network cable or power off the Cable/DSL Router during the firmware upgrade process.
3. Do not run the firmware upgrade if you are connected to the Cable/DSL Router via WIRELESS.
4. It is strongly recommended that you STOP any networking activities using the Cable/DSL Router before starting the upgrade process.
5. If the firmware upgrade process fails, DO NOT reboot your Cable/DSL Router. Please run the upgrade program again.

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Setting Up a Network 7

Other computers can be connected to the Router to form a network, which allows the computers to transfer files, communicate with each other, and share an Internet connection. The networked computers can be connected to the Router in two ways: Ethernet or wirelessly.

Ethernet

1. Insert the Installation CD in the CD-ROM drive of the computer. The Installation Buddy starts automatically. Wait until the following screen appears, read the on-screen instructions, select the country in which you live by clicking in the appropriate check box, then click **Next**.

Actiontec® Installation Buddy®
Welcome to the Actiontec Installation Buddy!
Please select the country in which you live. If the country in which you live is NOT listed below, please select OTHER COUNTRY.
Click NEXT to continue.
Hi! I'm YOUR INSTALLATION BUDDY. I'LL BE AROUND TO HELP YOU OUT...
Please select from the following:
USA
United Kingdom
Other Country
< Back
Next >
Help
Finish
Cancel

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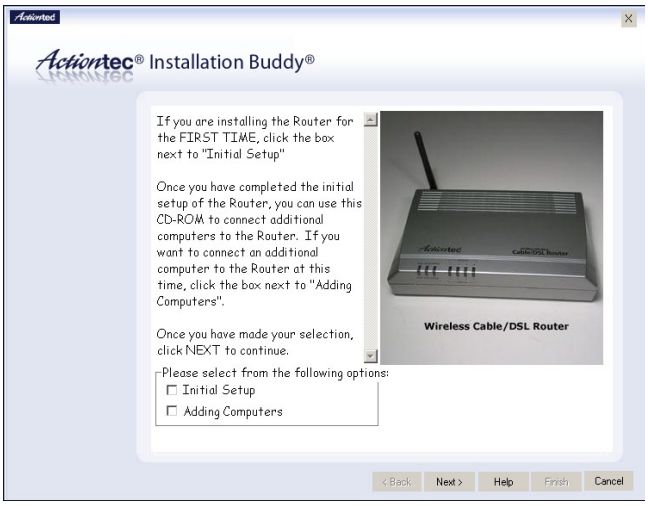
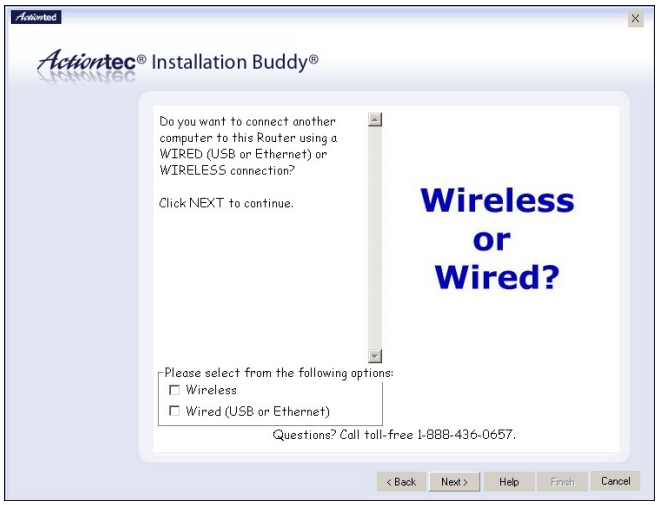
2. Read the instructions, select **Additional Computers** by clicking on the appropriate check box, then click **Next**.


Actiontec® Installation Buddy®
If you are installing the Router for the FIRST TIME, click the box next to "Initial Setup"
Once you have completed the initial setup of the Router, you can use this CD-ROM to connect additional computers to the Router. If you want to connect an additional computer to the Router at this time, click the box next to "Adding Computers".
Once you have made your selection, click NEXT to continue.
Wireless Cable/DSL Router
Please select from the following options:
Initial Setup
Adding Computers
< Back
Next >
Help
Finish
Cancel

3. Select **Wired (USB or Ethernet)**, then click **Next**.


Actiontec® Installation Buddy®
Do you want to connect another computer to this Router using a WIRED (USB or Ethernet) or WIRELESS connection?
Click NEXT to continue.
Wireless or Wired?
Please select from the following options:
Wireless
Wired (USB or Ethernet)
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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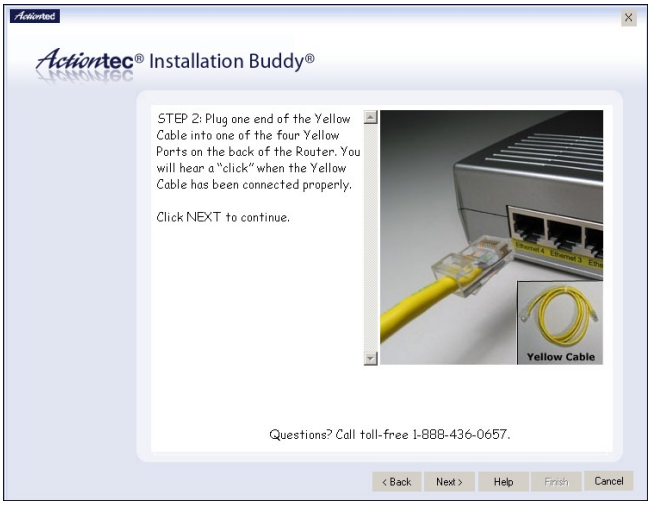
4. When the next window appears, get the **yellow Ethernet cable** from the kit, then click **Next**.

5. Plug one end of the **yellow Ethernet cable** into one of the open **yellow Ethernet ports** on the back of the Router, then click **Next**.


Actiontec® Installation Buddy®
STEP 2: Plug one end of the Yellow Cable into one of the four Yellow Ports on the back of the Router. You will hear a "click" when the Yellow Cable has been connected properly.
Click NEXT to continue.
Yellow Cable
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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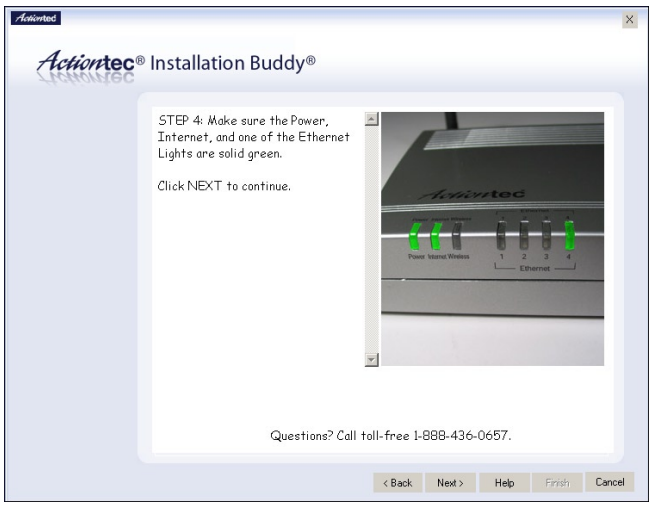
6. Plug the other end of the **yellow Ethernet cable** into an **Ethernet port** on the back of the computer, then click **Next**.

Actiontec® Installation Buddy®
STEP 3: Plug the other end of the Yellow Cable into the Ethernet Port on the back of the Computer. You will hear a "click" when the Yellow Cable has been connected properly.
NOTE: An Ethernet port looks like a phone port, but is slightly larger.
Click NEXT to continue.
Ethernet Port
Yellow Cable
Computer
Your computer may look slightly different
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

☞ ***Note***: An Ethernet port looks similar to a phone port, but is slightly bigger.

7. Make sure one of the **Ethernet lights** glows steadily green, then click **Next**.


Actiontec® Installation Buddy®
STEP 4: Make sure the Power, Internet, and one of the Ethernet Lights are solid green.
Click NEXT to continue.
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

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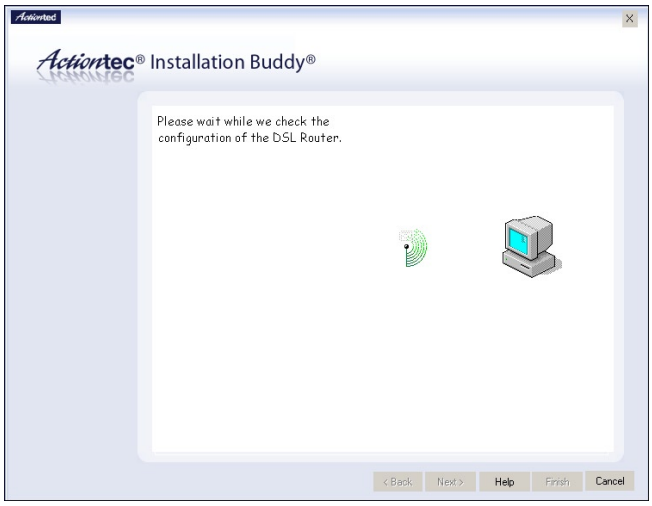
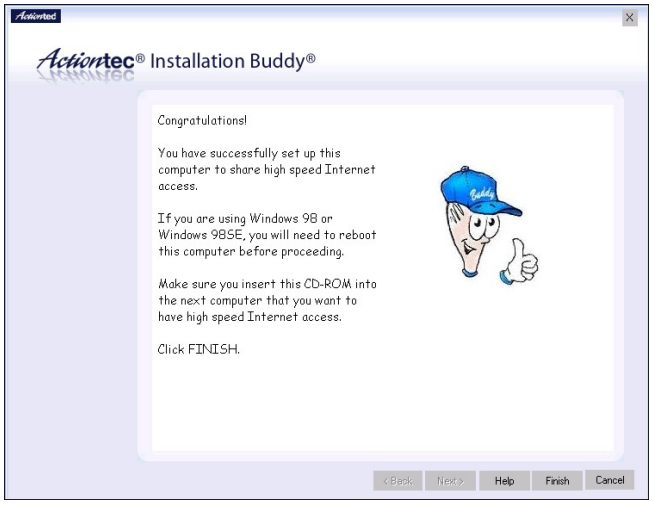
8. In the next window, the Installation Buddy checks the configuration of the Router.



9. A series of congratulations windows appears. Click through them to exit the Installation Buddy.


Actiontec® Installation Buddy®
Congratulations!
You have successfully set up this computer to share high speed Internet access.
If you are using Windows 98 or Windows 98SE, you will need to reboot this computer before proceeding.
Make sure you insert this CD-ROM into the next computer that you want to have high speed Internet access.
Click FINISH.
< Back
Next >
Help
Finish
Cancel

The computer is connected to the Router via Ethernet. To connect more computers to the Router via Ethernet, repeat this procedure.

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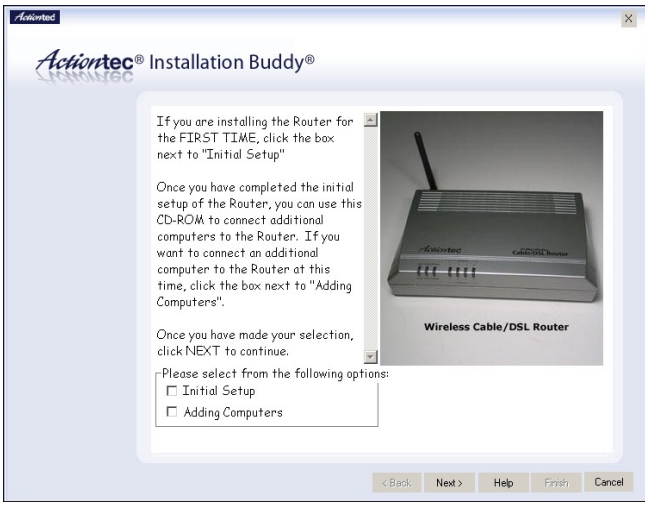
Wireless

☞ ***Note***: Computers wirelessly connected to the Router must have wireless capabilities (via a PCI wireless adapter, USB wireless adapter, built-in wireless adapter, etc.).

1. Insert the Installation CD in the CD-ROM drive of the computer. The Installation Buddy will start automatically. Wait until the following screen appears, read the on-screen instructions, select the country in which you live by clicking in the appropriate check box, then click **Next**.

Actiontec® Installation Buddy®
Welcome to the Actiontec Installation Buddy!
Please select the country in which you live. If the country in which you live is NOT listed below, please select OTHER COUNTRY.
Click NEXT to continue.
Hi! I'm YOUR INSTALLATION BUDDY. I'LL BE AROUND TO HELP YOU OUT...
Please select from the following
USA
United Kingdom
Other Country
< Back
Next >
Help
Finish
Cancel

2. Read the instructions, select **Adding Computers** by clicking in the appropriate check box, then click **Next**.


Actiontec® Installation Buddy®
If you are installing the Router for the FIRST TIME, click the box next to "Initial Setup"
Once you have completed the initial setup of the Router, you can use this CD-ROM to connect additional computers to the Router. If you want to connect an additional computer to the Router at this time, click the box next to "Adding Computers".
Once you have made your selection, click NEXT to continue.
Wireless Cable/DSL Router
Please select from the following options:
Initial Setup
Adding Computers
< Back
Next >
Help
Finish
Cancel

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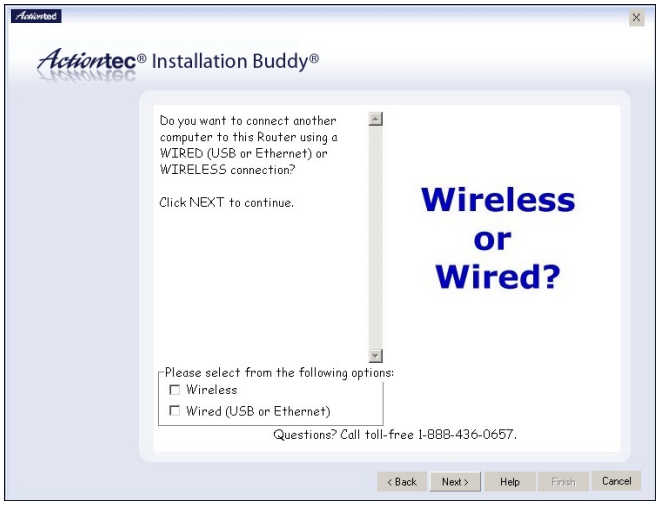
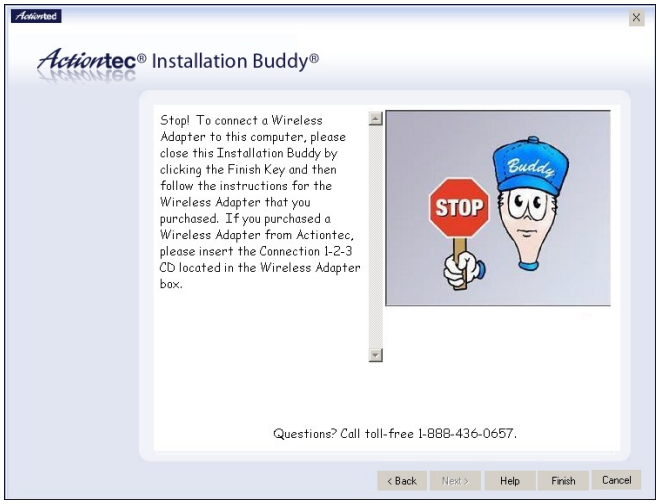
3. Select **Wireless**, then click **Next**.


Actiontec® Installation Buddy®
Do you want to connect another computer to this Router using a WIRED (USB or Ethernet) or WIRELESS connection?
Click NEXT to continue.
Wireless or Wired?
Please select from the following options:
Wireless
Wired (USB or Ethernet)
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

4. Read the on-screen instructions, then click **Finish**.


Actiontec® Installation Buddy®
Stop! To connect a Wireless Adapter to this computer, please close this Installation Buddy by clicking the Finish Key and then follow the instructions for the Wireless Adapter that you purchased. If you purchased a Wireless Adapter from Actiontec, please insert the Connection 1-2-3 CD located in the Wireless Adapter box.
STOP
Buddy
Questions? Call toll-free 1-888-436-0657.
< Back
Next >
Help
Finish
Cancel

After performing the procedure outlined in the screen, above, make sure the computer and the Router are using the same wireless network name. To wirelessly connect more computers to the Router, repeat this procedure.

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Troubleshooting 8

This chapter contains a list of problems that may be encountered while using the Router, and techniques to solve them. Note that these techniques may not be successful in all cases. Also included is a list of frequently asked questions.

Troubleshooting

Cannot Use the Internet

Physical Connections

Ensure the Router's Power light is on, as well as the appropriate lights for any active connections (Ethernet and Wireless). If the connection is not active, reconnect the appropriate cable or adapter.

Connection to the Internet

To verify the Router's connection to the Internet, open a Web browser. In the "Address" text box, type **192.168.0.1** and click **Go**. The Router's Web Configurator Main Menu appears. Select **Status**, and once the "Status" screen appears, verify that "Connected" is displayed in the "WAN" section of the screen. If not, power cycle the Router by unplugging and then replugging the Power cord. After power cycling the Router, check the connection status again. If still disconnected, go to the Main Menu, select **Setup**, and go through a Basic Setup procedure, making sure to enter all correct selections for your connection. After saving all settings and restarting the Router, check the connection status again. If still disconnected, unplug the Router's Power cord and leave it unplugged for at least 10 minutes. Replug the Power cord, restart the Router, and check the connection again.

Using on Network With Another Router/Gateway

If setting up the Router on a network with another router or gateway, consult the documentation that came with the other router/gateway to see what kind of Dynamic Routing is required to operate it with the Router. Then, go to the "Dynamic Routing" screen (see "Dynamic Routing" on page 44) to select the appropriate type of dynamic routing.

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Frequently Asked Questions

This section contains a list of questions concerning the Router, and answers to the questions.

General

I have run out of Ethernet ports on my Router. How do I add more computers?

Plugging in an Ethernet hub or switch can expand the number of ports on the Router. Connect a standard Ethernet cable from the "Uplink" port of the new hub or switch to an Ethernet port on the Router, then connect additional computers to the Ethernet hub or switch.

Which protocols does the Router support?

The internal LAN connections support multiple protocols (e.g. TCP/IP, NetBEUI, IPX/SPX, and AppleTalk). The External WAN connection supports only TCP/IP.

Which connection speeds does the Router support?

The LAN connections on the Router support 10/100 Mbps. The 802.11g wireless connection supports up to 54 Mbps connection speeds (depending on signal quality, environmental factors, and physical distance).

Will my Xbox work with the Router?

Yes, the Router is compatible with the Xbox. You will need to set a static IP on the Xbox in the Xbox live network settings, and forward ports 3074 (both UDP and TCP), 53 (both UDP and TCP), and 88 (UDP) if you run into DSL resolution errors.

Is the Router flash-upgradeable? How do I do it?

Yes, the firmware is upgradeable. You can find a link to the firmware site under "Utilities" in the Web-based configurator (see page).

Does the Router function as a DSL modem?

No, the Router does not have a DSL modem built-in.

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Do I need a specific cable or DSL modem to use the Router?

No, the Router works with any Ethernet cable, and virtually any cable/DSL modem.

Wireless

Can I use an 802.11b wireless card to connect to the Router?

Yes, the Router can handle 802.11b cards or 802.11g cards. The 802.11g standard is backward compatible with the 802.11b standard. The Router can be setup to handle just "g" wireless cards, just "b" wireless cards, or both.

If I install several Routers in different locations in my building, will they be able to talk to each other? Will I be able to stay connected as I move between them?

The Router does not communicate with other access points, since it is a single access point system. If you install several Router devices and move between coverage areas, your wireless device would actually have to reconnect to a separate network.

Will cordless phones interfere with the Router?

The Router uses the 2.4 GHz frequency. If your cordless phone uses this frequency, problems may occur. Different cordless phones use different frequencies, and generally include a label stating which frequency they use. If you are having problems with interference caused by your cordless phone, try changing the Router's channel (see "Wireless Settings" on page **32**). This can sometimes clear up interference issues. Any wireless device using the 2.4 GHz frequencies can cause wireless interference.

Which wireless cards will work with the Router?

The Router will connect with any wireless card supporting the 802.11g or 802.11b wireless standards.

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Can my wireless signal pass through floors, walls, and glass?

The physical environment around the Router can have a varying effect on wireless signal strength and quality. The more dense an object, the greater the interference. Concrete or metal reinforced structures will experience a higher degree of signal loss than those made of wood, plaster, or glass.

I have an Apple computer that uses the Airport wireless device. Is this device compatible with the Router?

Yes, the Apple Airport system complies with the 802.11b standards. If you use the WEP security feature, refer to the Apple Airport documentation for information on the proper method to enter the WEP key for compatibility with the Router's hexadecimal WEP entry.

What is the best placement for the Router to gain maximum throughput and distance?

The best placement for the Router is in an elevated position, centrally located in the area of service. To reduce the effect of physical barriers, place the Router in a location with the least physical obstructions in the service area.

Network

I use my laptop at work and at home. Is there something special I need to do to make it work in both places?

Yes. You must reconfigure your network settings, including Workgroup, Domain, Password, User name, IP addressing, and any other specific settings used by your company. You may also use third-party software like NetSwitcher to automatically switch between different configurations.

What is the valid IP range I can use for my home network?

The valid IP range for the Router is 192.168.0.2 to 192.168.0.254 by default.

How do I find out which IP address my computer is using?

Windows 95, 98, 98SE, and Me - Select **Start**, **Run**, and type **`winipcfg`**. Press **Enter**. When the "Winipcfg" window appears, ensure your network device is selected.

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Windows NT, 2000, and XP - Select **Start**, **Run** and type **cmd**. Press **Enter**. When the command screen is displayed, type **ipconfig** and press **Enter**.

I used DHCP to configure my network. Do I need to restart my computer to refresh my IP address?

No. Select the appropriate operating system, below, and follow the steps to refresh your IP address.

Windows 95, 98, 98SE, and Me - Go to **Start**, **Run**, type **winipcfg**, and press **Enter**. Ensure the Ethernet adapter is selected in the device box. Press the **Release_all** button, then press the **Renew_all** button.

Windows NT 4.0 and 2000 - Go to **Start**, **Run**, type **cmd**, and press **Enter**. At the DOS prompt type **ipconfig /release**, then type **ipconfig /renew**. (Note the space after **ipconfig**.)

Windows XP - Unplug the Ethernet cable or wireless card and plug it back in.

Can I run an application located on another computer over the network?

Yes, if the application is designed to run over a network.

Can I play games between computers on my network, or on the Internet?

Yes, if the games were designed for multi-player or LAN play. For specific information about whether a game is capable of Internet or LAN play, refer to the game documentation. Some games require ports to be forwarded to host or join games over the Internet.

I have an FTP or Web server on my network. How can I make it available to users on the Internet?

For a Web server, enable port forwarding for port 8080 to the IP address of the server and set up the Web server to receive on that port, as well. (Configuring the server for static IP address use is recommended.) For an FTP server, enable port forwarding for port 21 to the IP address of the server. (Configuring the server for static IP address use is recommended.)

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Connections

Everything appears to be setup properly with the Router, but I can't connect to the Internet. Why?

If you had your Internet connection already set up on your computer, you may need to power cycle your cable/DSL Modem before the Router can sync up with the modem. Unplug the cable/DSL modem and the Router from their respective power outlets, and shut down your computer. Wait at least five minutes, then plug in the modem. Once your modem is back up, you can plug in the Router and restart your computer.

How many computers can be connected through the Router?

The Router is capable of 254 connections, but having no more than 45 connections is recommended. As the number of connections increases, the available speed for each computer decreases.

Security

What is WEP?

WEP (**W**ired **E**quivalent **P**rivacy) is the standard that encrypts 802.11g/802.11b communications.

What is the default username for the Router?

The default username for the router is **admin** (all lower case). To activate the password to protect the Router, change the default password, which is blank by default. Remote management is not available on the Router until the default password is changed.

What is the difference between 40-bit and 64-bit encryption?

There really is no difference between the two. They are just different terminologies used throughout the industry for the same level of encryption.

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How do I make a HEX-based WEP key?

64-bit - Generated as 10 alphanumeric characters (0-9, a-f).
Example: 843c29a562.

128-bit - Generated as 29 alphanumeric characters (0-9, a-f).
Example: 3c29f2536bef3276d32e364a2c.

What is WPA?

WPA (**W**i-Fi **P**rotected **A**ccess) is a new standard for wireless encryption for 802.11g/802.11b communications.

Does the Router function as a firewall?

Yes. The Router provides its security through the use of NAT firewall, which acts as a physical barrier between your network and the Internet.

What is NAT and how does it protect my network?

NAT (**N**etwork **A**ddress **T**ranslation) is a type of security that masks the private IP addresses of the computers on your network with a single public IP address. With NAT, the private IP address of the computers on your network is never transmitted over the Internet.

Which Virtual Private Networking (VPN) protocols are supported?

The Router supports pass-through for PPTP, L2TP, and IPSec.

Can I use Internet firewall or security programs with my network?

Because the Router uses NAT firewall security, it is not necessary to use any other program for security. The use of third-party firewall or Internet security software is not recommended, since certain programs create problems on a private network (BlackIce Defender, Norton Internet Security, and ZoneAlarm, for example).

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Reference

A

This appendix contains information about various topics, including accessing information about your Windows computer.

Locating Computer Information

The following procedure is valid for computers running Windows 98 SE, Me, NT 4.0, 2000, and XP.

1. From the desktop, right-click on **My Computer**.
2. Select **Properties** from the menu that appears.
3. When the "System Properties" window appears, select **General**. The version of the operating system, processor type, and amount of RAM installed in the computer are listed here.
4. Close the System Properties window.
5. From the desktop, double-click on **My Computer**.
6. Right-click the icon representing your hard disk. For example: Local Disk (C:). Some computers have multiple hard disks.
7. From the menu that appears, select **Properties**.
8. When the window appears, select **General**.
9. The free space value is the available space on the hard disk.
10. Close all windows.

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Locating Windows Operating System Files

If the operating system files reside on the hard drive of the computer, follow the instructions below to locate them. If the files are not on the hard drive, they must be loaded from the installation disks.

Windows 98 SE

1. From the desktop, click **Start**.
2. When the menu appears, select **Find,** then **Files or Folders**.
3. When the "Find: All Files" window appears, select **Name & Location**.
4. In the "Named" text box, enter:
   `*.cab`
5. Click the **down arrow** next to the "Look In" text box and select **My Computer** from the list that appears.
6. Click **Find Now**.
7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \SYSTEM.
8. The Windows operating system files are located in this directory. Write down the directory path for future reference.
9. Close the Find: All Files window.

Windows Me, 2000

1. From the desktop, click **Start**.
2. Select **Search**, then **For Files and Folders**.

3a. Windows Me: The "Search Results" window appears. In the "Search for files or folders named" text box, enter:
`*.cab`

3b. Windows 2000: The "Search Results" window appears. In the "Search for files or folders named" text box, enter:
`i386`

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4. Click the **down arrow** next to the "Look in" text box and select **My Computer** from the list that appears.

5. Click **Search Now**.

6a. Windows Me: When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \OPTIONS\INSTALL.

6b. Windows 2000: When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINNT \Driver Cache.

7. The Windows operating system files are located in this directory. Write down the directory path for future reference.

8. Close the Search Results window.

Windows NT 4.0

1. From the desktop, click **Start**.

2. When the menu appears, select **Find,** then **Files or Folders**.

3. When the "Find: All Files" window appears, select **Name & Location**.

4. In the "Named" text box, enter:

```
i386
```

5. Click the **down arrow** next to the "Look In" text box and select **My Computer** from the list that appears.

6. Click **Find Now**.

7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\.

8. The Windows operating system files are located in this directory. Write down the directory path (followed by "i386") for future reference.

9. Close the Find: All Files window.

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Windows Me, 2000

1. From the desktop, click **Start**.
2. Select **Search**, then **For Files and Folders**.
3. The "Search Results" window appears. In the panel at left titled "What do you want to search for?", click **All files and folders**.
4. Another panel, titled "Search by any or all of the criteria below" appears. In the "Look in" text box, click the **down arrow** and select **My Computer** from the menu that appears.
5. In the "All or part of the file name" text box, enter:
   `i386`
6. Click **Search**.
7. When the search is complete, note the directory path that appears most often in the "In Folder" column. For example: C:\WINDOWS \Driver Cache\.
8. The Windows operating system files are located in this directory. Write down the directory path (followed by "\i386") for future reference.
9. Close the Search Results window.

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Setting Up Static IP on the Computer

B

To communicate with the Router from a computer on the network (to use the Web Configuration Utility, for example), the user may have to switch the IP address settings from DHCP-enabled to static IP, so that the computer and the Router are on the same network subnet.

To set up static IP on a computer, select the operating system and follow the instructions.

☞ ***Note***: The following procedures are based on the Router's factory default IP address. If the Router's IP address has been changed, enter the new IP address when instructed to enter an IP address.

Windows 98 SE

1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.

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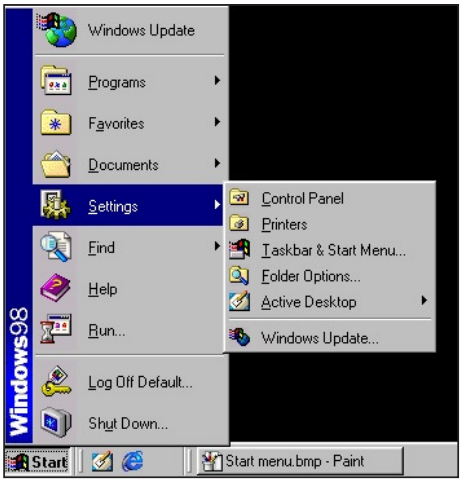
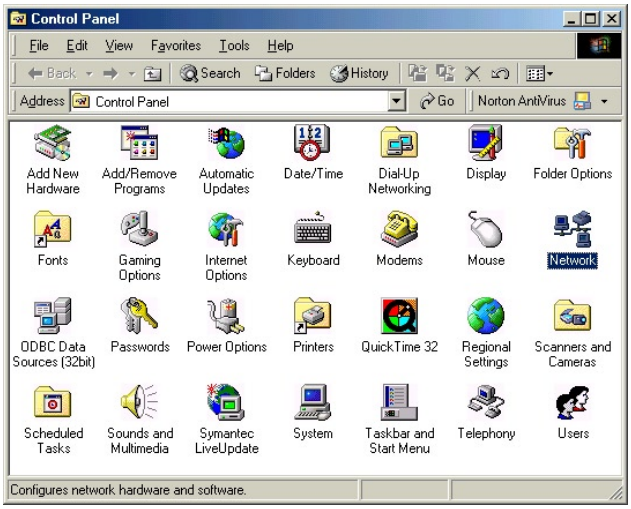
3. Another menu appears. Select **Control Panel**.



4. When the "Control Panel" window appears, double-click **Network**.



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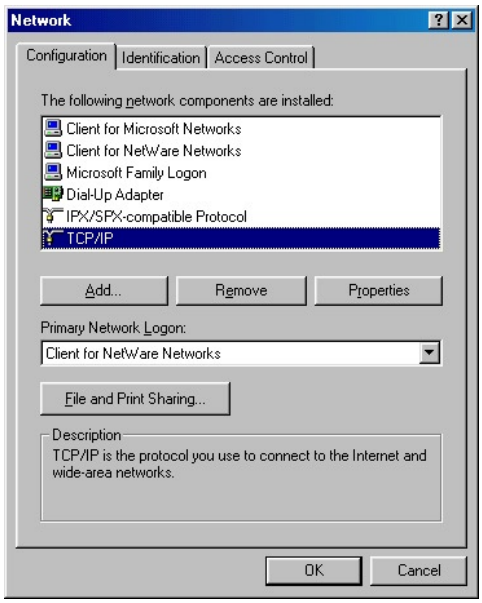
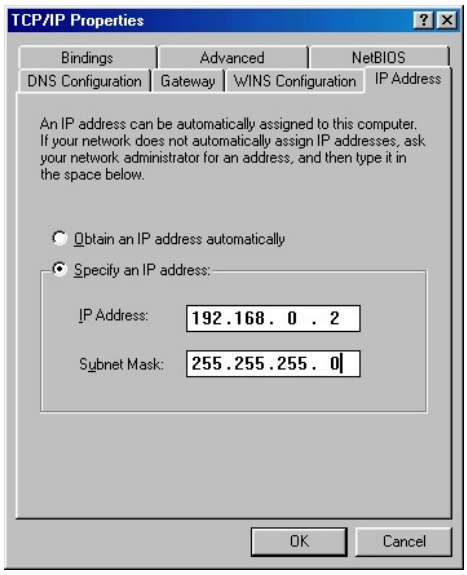
5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Select **IP Address**.



7. In the IP Address tab, make sure the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following address in the "IP Address" text box:

`192.168.0.2`

Enter the periods in the address by pressing the space bar on the keyboard.

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9. Enter the following address in the "Subnet mask" text box:

   `255.255.255.0`

   Enter the periods in the address by pressing the space bar on the keyboard.

10. Click **OK**. The TCP/IP Properties window disappears.

11. In the Network window, click **OK**. The Network window disappears.

12. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.

System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

The computer restarts. It is now set up with a static IP address, allowing access to the Router's Web Configuration Utility.

Windows Me

1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

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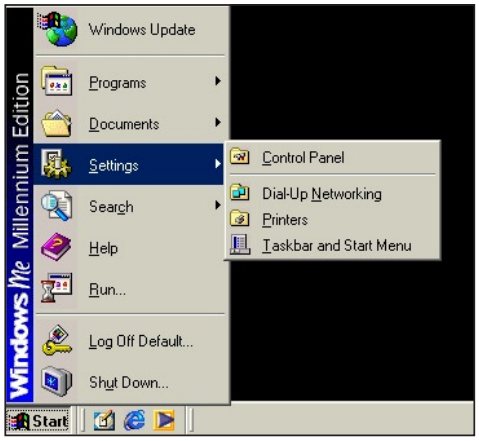
3. Another menu appears. Select **Control Panel**.



4. When the "Control Panel" window appears, double-click **Network**.

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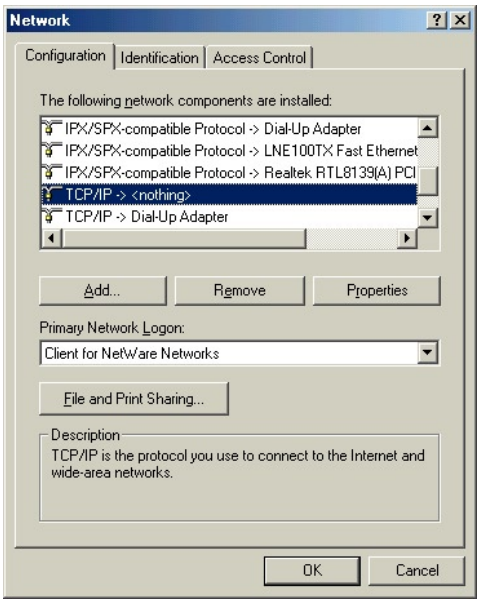
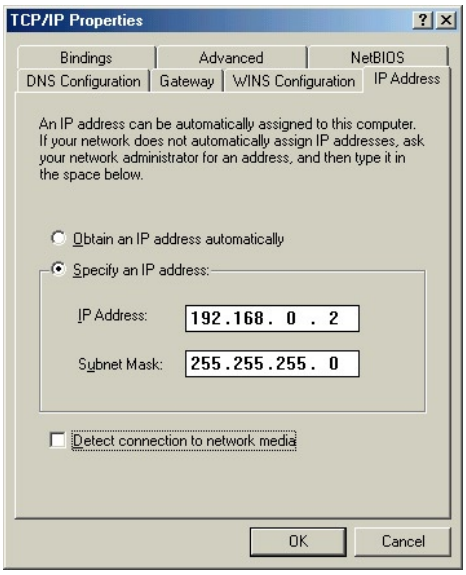
5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Click **IP Address**.


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
192.168. 0 . 2
Subnet Mask:
255.255.255. 0
Detect connection to network media
OK
Cancel

7. In the IP Address tab, make sure the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following address in the "IP Address" text box:

`192.168.0.2`

Enter the periods in the address by pressing the space bar on the keyboard.

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9. Enter the following address in the "Subnet mask" text box:

   `255.255.255.0`

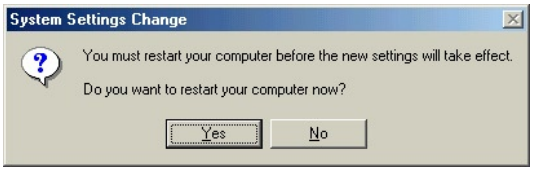
   Enter the periods in the address by pressing the space bar on the keyboard.

10. Click **OK**. The TCP/IP Properties window disappears.

11. If there is a check in the box next to "Detect connection to network media," click on it to uncheck the box.

12. In the Network window, click **OK**. The Network window disappears.

13. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.


System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

The computer restarts. It is now set up with a static IP address, allowing access to the Router's Advanced Setup utility.

Windows 2000

1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

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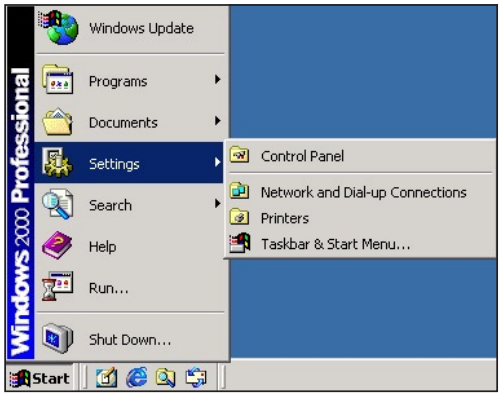
3. Another menu appears. Select **Control Panel**.



4. When the "Control Panel" window appears, double-click **Network and Dial-up Connections**.

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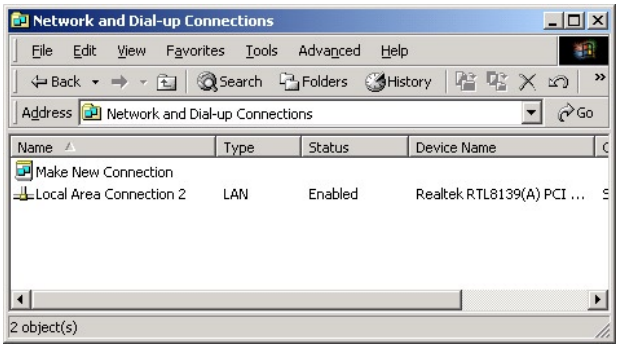
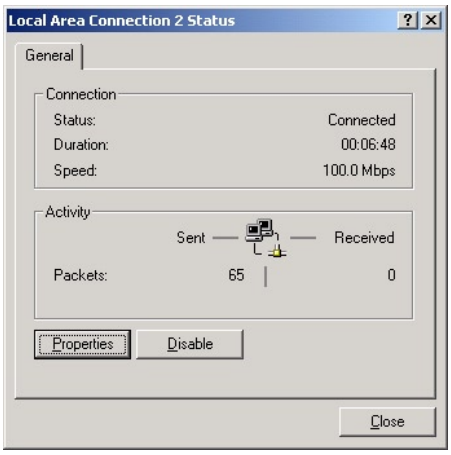
5. In the "Network and Dial-up Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If more than one Local Area Connection is listed, locate the one that corresponds to the network card installed in the computer by finding the name of the network card in the **Device Name** column.


Network and Dial-up Connections
File Edit View Favorites Tools Advanced Help
Back Search Folders History
Address Network and Dial-up Connections
Go
Name Type Status Device Name
Make New Connection
Local Area Connection 2 LAN Enabled Realtek RTL8139(A) PCI ...
2 object(s)

6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.



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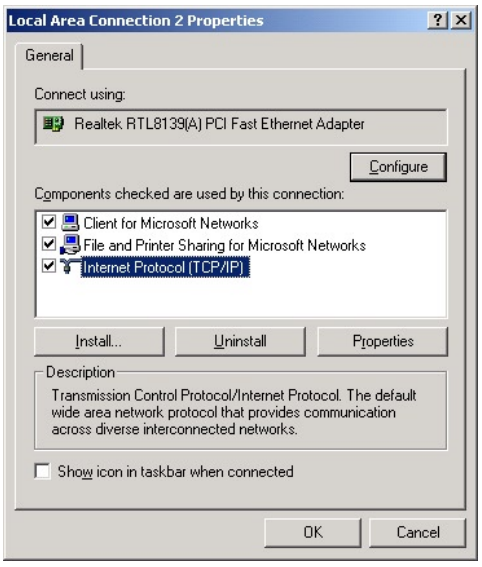
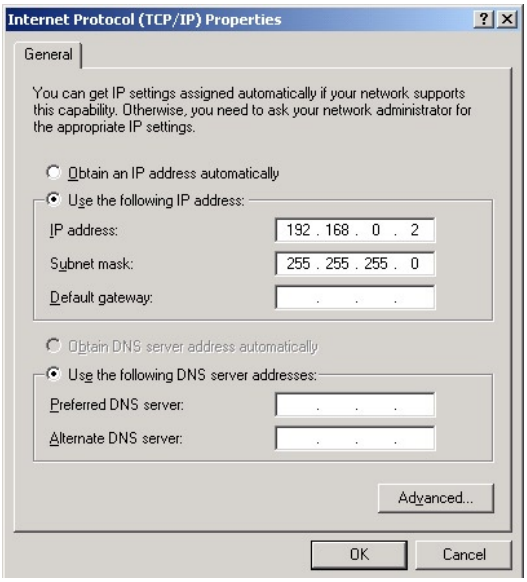
7. The "Local Area Connection Properties" window appears. Click **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol** (TCP/IP).



9. The "Internet Protocol (TCP/IP) Properties" window appears.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 2
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

10. In the **General** tab, make sure the circle next to "Use the following IP Address " is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following address in the "IP Address" text box:

`192.168.0.2`

Enter the periods in the address by pressing the space bar on the keyboard.

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12. Enter the following address in the "Subnet mask" text box:

`255.255.255.0`

Enter the periods in the address by pressing the space bar on the keyboard.

13. Click **OK**. The "Internet Protocol (TCP/IP) Properties" window disappears.

14 In the "Local Area Connection Properties" window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

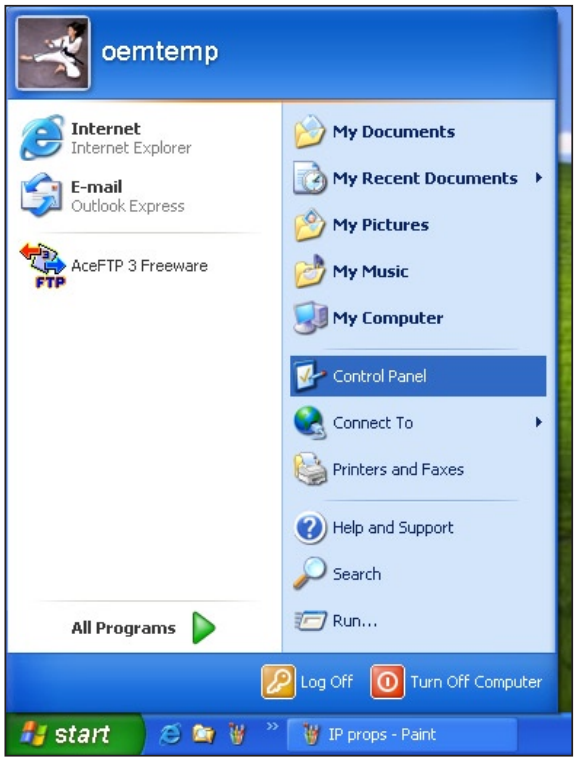
16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing access to the Router's Web Configuration Utility.

Windows XP

1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Control Panel**.



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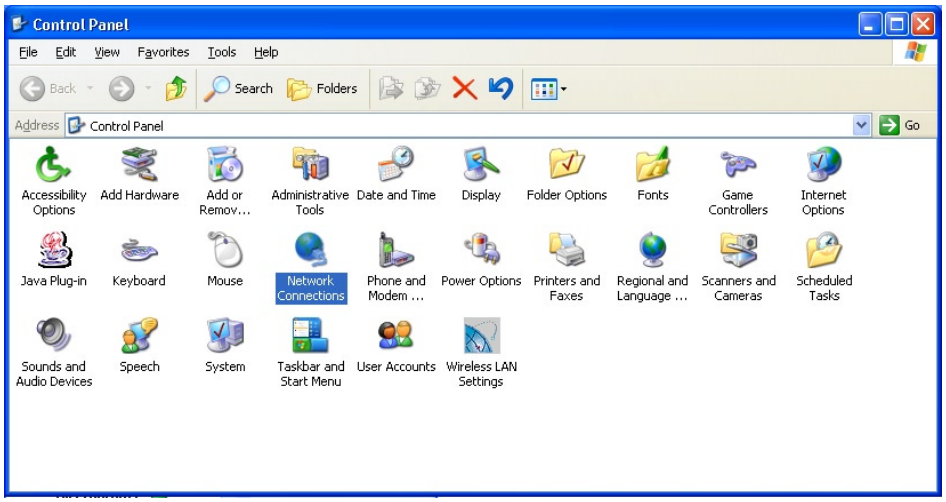
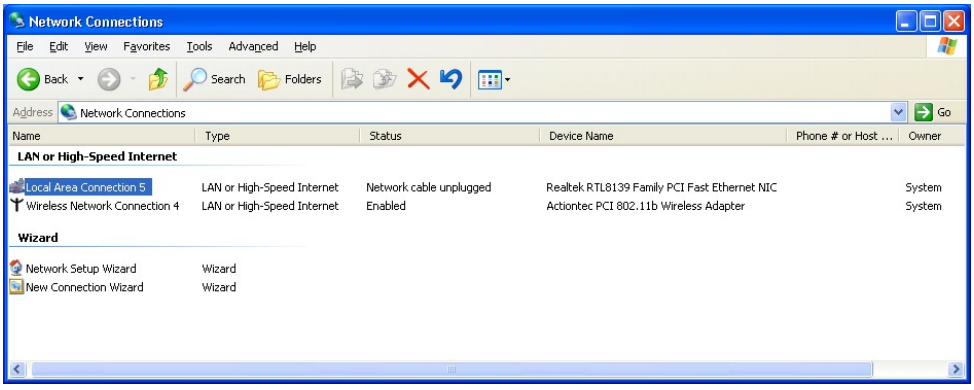
3. When the "Control Panel" window appears, double-click **Network Connections**.



4. In the "Network Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If more than one Local Area Connection is listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network card in the **Device Name** column.



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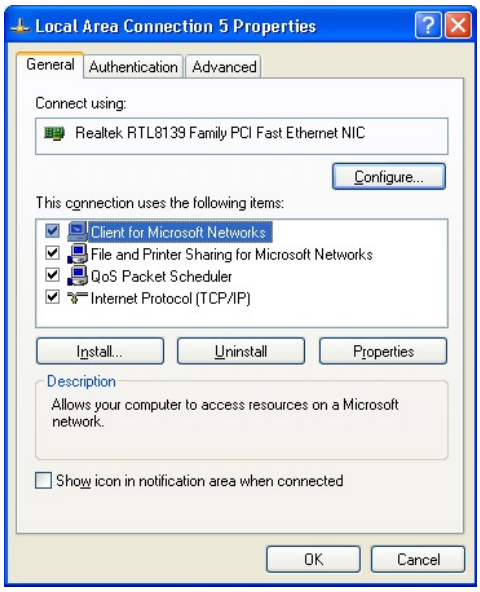
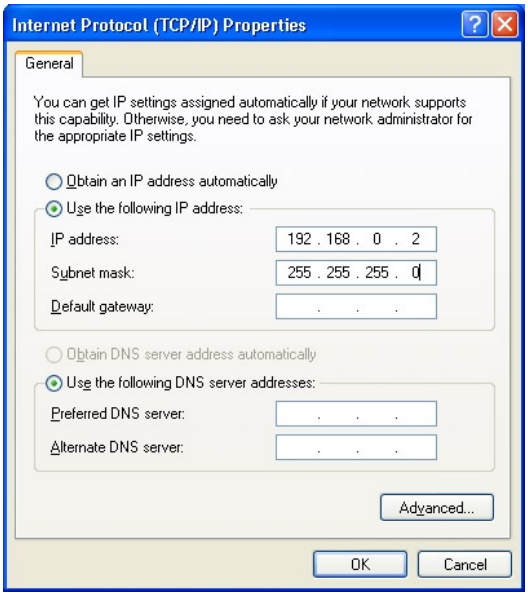
5. The "Local Area Connection Properties" window appears. Select **General**.

6. In the "This connection uses the following items" list box, double-click **Internet Protocol** (TCP/IP).



7. The "Internet Protocol (TCP/IP) Properties" window appears.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 2
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

8. In the **General** tab, make sure the circle next to "Use the following IP Address " is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

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9. Enter the following address in the "IP Address" text box:

   `192.168.0.2`

   Enter the periods in the address by pressing the space bar on the keyboard.

10. Enter the following address in the "Subnet mask" text box:

    `255.255.255.0`

    Enter the periods in the address by pressing the space bar on the keyboard.

11. Click **OK**. The Internet Protocol (TCP/IP) Properties window disappears.

12 In the Local Area Connection Properties window, click **Close**. The Local Area Connection Properties window disappears.

13. Click **Close** in the Local Area Connection Status window. The window disappears.

14. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing access to the Router's Web Configuration Utility.

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Computer Security

The Internet is a giant network of computers located all over the world. When a computer is connected to the Internet, it can exchange information with any other computer on the Internet. This allows a computer user to send E-mail, surf the World Wide Web, download files, and buy products and services online, but it also makes the computer vulnerable to attack from persons intent on doing harm. Unless access to the computer is controlled, someone on the Internet can access the information on the computer and steal, damage, or destroy that information.

*Action*tec recommends securing your computer from unwanted intrusion. Security is ultimately the end user's responsibility. Please secure your computer, and don't be a victim.

Comparing Broadband Service with a Dial-Up Modem

With a dial-up modem, a computer user makes an Internet connection by dialing a telephone number, surfs the Internet for a period of time, and then disconnects the dial-up modem. No one on the Internet can access a computer not connected to the Internet.

Unlike a dial-up modem, broadband service is "always connected." The connection is always available – there is no need to dial a phone number to access the Internet. The computer can be connected to the Internet all the time.

With both types of Internet connections, access to the computer must be controlled to make sure someone on the Internet doesn't access the information on the computer. The longer the computer is connected to the Internet, the easier it is for someone on the Internet to find the computer and attempt to access it without permission. Broadband service also provides fast Internet connections. This not only improves Internet performance, it also improves Internet performance for anyone attempting to access the computer.

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Router Security

If connecting to the ISP through Point-to-Point Protocol (PPP), be sure to provide the Router an administrative password. If a password is not set, someone on the Internet can access the Router and change its configuration or steal your PPP login name and password. For instructions on setting the password, see the "Advanced Setup" chapter.

If connecting to the ISP through bridging mode, the Router should be safe from unwarranted and illegal intrusion.

Computer Security

To protect the valuable information on the computer, review the following topics. These topics cover software programs and operating system features affecting the security of the computer's data.

Anti-Virus Programs

The computer should have an anti-virus program, and the virus definitions should be updated on a regular basis – at least once a month.

E-Mail Attachments

Never run a program received as an attachment to an E-mail message unless the program is known to be safe. A program from an unknown source can delete all the files on the computer's hard disk or install a "back door" software application that lets people on the Internet gain access to the computer without permission.

Internet Browsers

Always exit the Internet browser (Internet Explorer or Netscape Navigator, for example). Never "minimize" the browser or leave it open in the background. Breaking into a computer is easier when an Internet browser is running.

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Network Applications

Network applications (such as software programs) that allow remote access to the computer also make the computer vulnerable to access from other people on the Internet. If using a network application that allows remote access, consider installing a firewall.

Electronic Security

Here are two methods to secure your computer electronically.

Network Address Translation

If a local area network and a PPP connection to the ISP using dynamic IP addresses through a DHCP server are being used, Network Address Translation (NAT) is being used. NAT provides a very basic level of security.

Firewalls

The safest way to prevent attacks on the computer is through a firewall – a hardware device or software program that protects the computer from unauthorized access by controlling who can access your computer and by monitoring the transmissions between the computer and the Internet

Windows XP has a built-in firewall. For more information, select **Help and Support Center** from the Help menu. Search for **Internet Connection Firewall**.

If Windows 98 SE, Me, NT 4.0, or 2000 is running on the computer, consider installing a firewall. Hardware and software firewall products are changing rapidly as more homes and businesses establish high-speed digital connections between their local area networks and the Internet.

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Specifications

D

General

Model Number

GT704WR-00 (54 Mbps Wireless Cable/DSL Router)

Standards

IEEE 802.3x (10BaseT, full duplex capable)
IEEE 802.3u (100BaseTX, auto negotiation)
IEEE 802.11b/g (Wireless)

Protocol

LAN - CSMA/CD

WAN

10/100 RJ-45 Ethernet port

LAN

10/100 RJ-45 switched Ethernet ports (4)

Speed

LAN Ethernet: 10/100 Mbps auto-sensing
Wireless: 802.11g 54 Mbps optimal (see "Wireless Operating Range" for details)

Cabling Type

Ethernet 10BaseT: UTP/STP Category 3 or 5
Ethernet100BaseTX: UTP/STP Category 5

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Wireless Operating Range

Indoors

Up to 91 M (300 ft.)

Outdoors

Up to 533 M (1750 ft.)

Topology

Star (Ethernet)

LED Indicators

Power, Internet, Wireless, Ethernet (4)

Environmental

Power

External, 12V DC, 600mA

Certifications

FCC Class B, FCC Class C (part 15, 68), CE Mark Commercial, UL

Operating Temperature

0º C to 40º C (32º F to 104º F)

Storage Temperature

-20º C to 70º C (-4º F to 158º F)

Operating Humidity

10% to 85% (non-condensing)

Storage Humidity

5% to 90% (non-condensing)

Note: Specifications are subject to change without notice.

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Glossary

Access Point

A device that allows wireless clients to connect to one another. An access point can also act as a bridge between wireless clients and a "wired" network, such as an Ethernet network. Wireless clients can be moved anywhere within the coverage area of the access point and remain connected to the network. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless traffic and forwarding wireless client messages to the Ethernet network.

ATM (Asynchronous Transfer Mode)

A networking technology based on transferring data in fixed-size packets.

Client

A desktop or mobile computer connected to a network.

DHCP (Dynamic Host Configuration Protocol)

A protocol designed to automatically assign an IP address to every computer on the network.

DNS (Domain Name System) Server Address

Allows Internet host computers to have a domain name and one or more IP addresses. A DNS server keeps a database of host computers and their respective domain names and IP addresses so that when a user enters a domain name into a Web browser, the user is sent to the proper IP address. The DNS server address used by computers on the home network corresponds to the location of the DNS server the ISP has assigned.

DSL (Digital Subscriber Line) Modem

A modem that uses existing phone lines to transmit data at high speeds.

Encryption

A method to provide wireless data transmissions a level of security.

ESSID (Extended Service Set Identifier)

A unique identifier for a wireless network. Also known as "SSID."

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Ethernet Network

A standard wired networking configuration using cables and hubs.

Firewall

A method preventing users outside the network from accessing and/or damaging files or computers on the network.

Gateway

A central device that manages the data traffic of the network, as well as data traffic to and from the Internet.

IP (Internet Protocol) Address

A series of four numbers separated by periods identifying a unique Internet computer host.

ISP Gateway Address

An IP address for the Internet router. This address is only required when using a cable or DSL modem.

ISP (Internet Service Provider)

A business that allows individuals or businesses to connect to the Internet.

LAN (Local Area Network)

A group of computers and devices connected together in a relatively small area (such as a house or an office). A home network is considered a LAN.

MAC (Media Access Control) Address

The unique hardware address of a device connected to a network.

NAT (Network Address Translation)

A method allowing all of the computers on a home network to use one IP address, enabling access to the Internet from any computer on the home network without having to purchase more IP addresses from the ISP.

PC Card

An adapter that inserts in the PCMCIA slot of a computer, enabling the communication with a device.

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PPPoE (Point-To-Point Protocol over Ethernet)/ PPPoA (Point-To-Point Protocol over ATM)

Methods of secure data transmission.

Router

A central device that manages the data traffic of the network.

Subnet Mask

A set of four numbers configured like an IP address used to create IP address numbers used only within a particular network.

SSID

See "ESSID."

TCP/IP (Transmission Control Protocol/Internet Protocol)

The standard protocol for data transmission over the Internet.

WAN (Wide Area Network)

A network that connects computers located in separate areas, (i.e., different buildings, cities, countries). The Internet is a WAN.

WECA (Wireless Ethernet Compatibility Alliance)

An industry group that certifies cross-vender interoperability and compatibility of IEEE 802.11b wireless networking products and promotes the standard for enterprise, small business, and home environments.

WLAN (Wireless Local Area Network)

A group of computers and other devices connected wirelessly in a small area.

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Firewall Security Level Services Table

The following information is related to the Firewall options (High, Medium, and Low) section in the "Advanced Setup" chapter of this manual (see page 44). The types of services and their respective ports are listed in the two right-hand columns: the "In" column details whether a particular service can be accessed by a user outside of the network; and the "Out" column details whether a computer on the Router's network can access a particular incoming service.

For example, in the "High Security Level" section below, the **http** service uses **port 80**. Since **no** is listed in the **In** column, a user outside the Router's network cannot access a computer on the network via the http service; in this case, no computers on the network can be used as a Web server (i.e., to host a Web site accessible to outside users). However, since **yes** is listed in the **Out** column, all computers on the Router's network can access the Internet via the http port.
If Basic Security is selected in the "Firewall" screen, firewall filtering is based on the basic NAT firewall.

High Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	no	yes
ftp	21	no	no
telnet	23	no	no
smtp	25	yes	yes
pop3	110	yes	yes
nntp	119	no	no
real audio/video	7070	no	no
icmp	n/a	no	yes
H.323	1720	no	no
T.120	1503	no	no
SSH	22	no	no
imap	163	yes	yes
https	443	yes	yes
secure imap	983	yes	yes
secur pop3	885	yes	yes

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Medium Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	no	yes
ftp	21	no	yes
telnet	23	no	yes
smtp	25	yes	yes
pop3	110	yes	yes
nntp	119	no	yes
real audio/video	7070	yes	yes
icmp	n/a	no	yes
H.323	1720	no	yes
T.120	1503	yes	yes
SSH	22	no	yes
imap	163	yes	yes
https	443	yes	yes
secure imap	983	yes	yes
secure pop3	885	yes	yes

Low Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	yes	yes
ftp	21	no	yes
telnet	23	no	yes
smtp	25	yes	yes
pop3	110	yes	yes
nntp	119	no	yes
real audio/video	7070	no	yes
icmp	n/a	yes	yes
H.323	1720	yes	yes
T.120	1503	yes	yes
SSH	22	yes	yes
imap	163	yes	yes
https	443	yes	yes
secure imap	983	yes	yes
secure pop3	885	yes	yes

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Basic Security Level

NAT (**N**etwork **A**ddress **T**ranslation) only.

Service Acronym Definitions

http

Hyper**T**ext **T**ransfer **P**rotocol. This protocol delivers information over the Internet, and is used when a computer connects to a Web site via an Internet browser.

dns

Domain **N**ame **S**ystem. A data query system used to translate host names into Internet addresses (i.e., www.somewebsite.com translates to 888.999.000.111).

ftp

File **T**ransfer **P**rotocol. A protocol used to transfer files over the Internet.

telnet

An Internet communications protocol enabling one computer to function as a terminal working from another (remote) computer.

smtp

Simple **M**ail **T**ransfer **P**rotocol. A protocol used to transfer E-mail between computers over the Internet. Can be used to send and receive mail.

pop3

Post **O**ffice **P**rotocol 3. Another protocol used to transfer E-mail between computers. Usually employs a pop3 server, and is used to receive mail only.

nntp

Network **N**ews **T**ransfer **P**rotocol. A protocol used to distribute and retrieve news articles over the Internet.

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real audio/video

A protocol used to transfer Real Audio or Real Video files.

icmp

Internet **C**ontrol **M**essage **P**rotocol. Allows error messages, text packages, and informational messages to be transferred over the Internet.

H.323

A standard protocol for sending audio and video over the Internet.

T.120

A standard protocol for multimedia teleconferencing over the Internet.

SSH

Secure **Sh**ell. A method for the secure transfer of files from another computer. Also enables remote capabilities (terminal, log in, etc.).

imap

Internet **M**essage **A**ccess **P**rotocol. A protocol for retrieving E-mail messages.

https

Hyper**T**ext **T**ransfer **P**rotocol using **S**ecure Socket Layer. A secure version of the protocol that delivers information over the Internet.

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Non-Windows System Setup

G

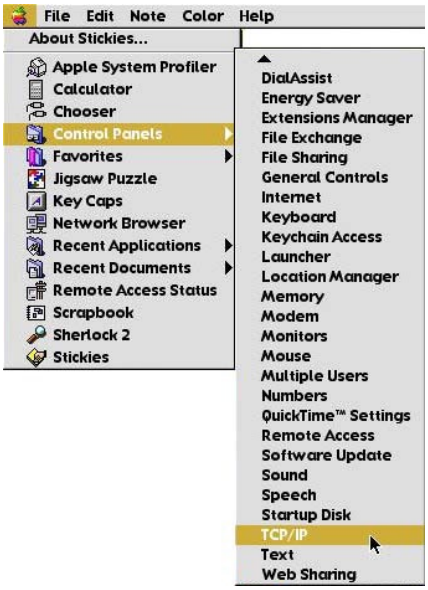
The Router supports both the Classic Macintosh operating systems (9.2.2 and below), as well as OS X.

☞ ***Note***: When installing any software, consult the user manual and help files supplied with the software for detailed information. *Action*tec provides the following information as a guideline only.

Classic

To configure the Router, Open Transport 2.5.2 or above must be loaded on the computer.

1. Click **Apple, Control Panels**, then **TCP/IP**.



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2. When the "TCP/IP" window appears, select **Edit** from menu bar, then select **User Mode**.

3. When the "User Mode" window appears, select **Advanced**, then click **OK**.

4. In the "TCP/IP" window, select **Ethernet** from the "Connect via" drop-down list.

5. Select **Using DHCP Server** from the "Configure" drop-down list.

6. Ensure the "Use 802.3" option is **not** checked.

7. Disregard any addresses in the IP Address text boxes. They will be reacquired when the first connection is made.

8. Click **Options** and when the "TCP/IP Options" window appears, select **Active**. Ensure the "Load only when needed" option is **not** checked, then click **OK**.

9. Close the "TCP/IP" window and when prompted to save changes, click **Save**.

10. Restart the computer. The TCP/IP settings are configured.

To finish setting up the computer to connect with the Router, follow the instructions in chapter 2, "Performing a Basic Setup," on page 21.

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OS X

1. From the Apple Menu, select **System Preferences**.

2. When the "System Preferences" window appears, click **Network**.

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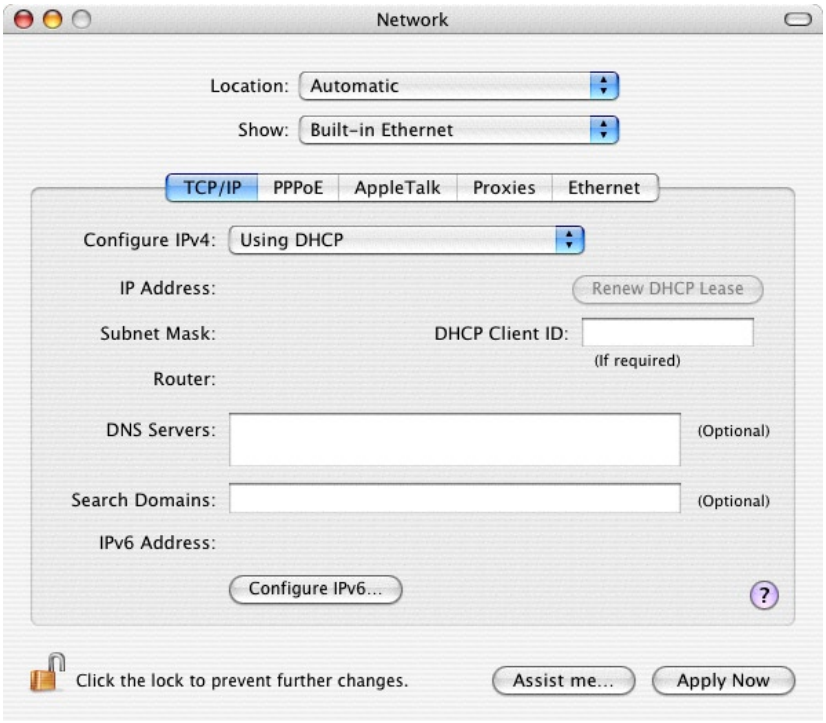
3. The Network window appears. Select **Built-In Ethernet** from the "Show" drop-down list.



4. Select **TCP/IP** and, from the "Configure" drop-down list, select **Using DHCP**.

5. Click **Apply Now** and close the "System Preferences" application. The TCP/IP settings are configured.

To finish setting up the computer to connect with the Router, follow the instructions in chapter 2, "Performing a Basic Setup," on page 21.

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Notices

Regulatory Compliance Notices

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by A*ction*tec Electronics, Inc., may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference;

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2. This device must accept any interference received, including interference that may cause unwanted operation.

☞ ***Note***: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

*Action*tec Electronics, Inc.
760 North Mary Ave.
Sunnyvale, CA 94086
United States
Tel: (408) 752-7700
Fax: (408) 541-9005

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